

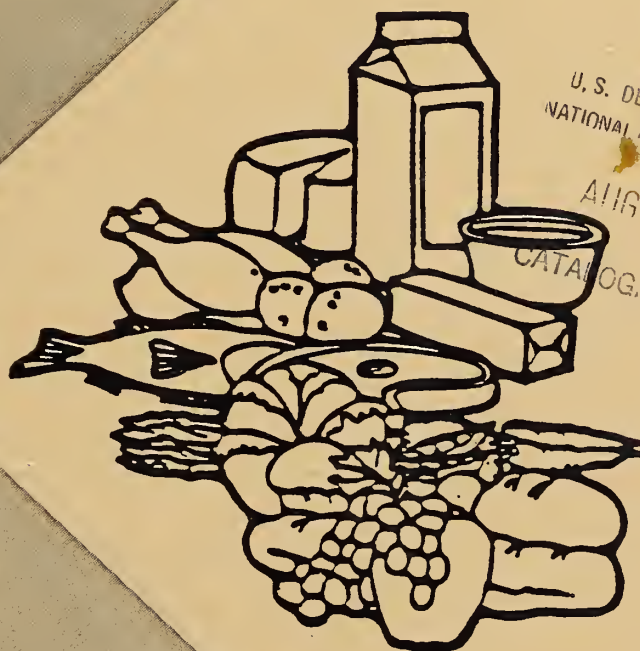
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GUIDELINES

THE STORAGE AND CARE OF FOOD PRODUCTS



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FOREWORD

This is a technical assistance manual for use by food service directors of publicly funded feeding programs who handle USDA donated and commercially supplied foods. The guidelines presented in this manual may also be of use to establishments in the private sector.

The information presented herein is intended as a complement to, but not a substitute for regulations and policies developed by FNS and other agencies relating to the handling and storage of food products. The mention of trade names, commercial products, or organizations in this manual does not imply endorsement by the U.S. Government.

This manual represents one of several manuals produced by the Food Industry Services Group for the Food Distribution Division of FNS. These publications are designed to provide technical assistance to food service supervisors for improving procurement and handling of food products. These manuals are as follows:

Volume I	Catalog of Specifications - 265 pages
Volume II	Contract Purchasing - Variable Cost - 310 pages
Volume III	Food Facts - 585 pages
Volume IV	Directory of Information Sources - 570 pages
Volume V	Storage and Care of Food Products - 225 pages
Volume VI	Purchasing French Fry Potatoes - 160 pages

Although the research funds for the compilation of these manuals were provided by the U.S. Department of Agriculture, printing and handling cost are to be assumed by the end-users. Copies of the manuals may be obtained at modest charges from the source listed below. The charges include costs of printing, handling and mailing at book rates, promotion and advertising. Revenue from the sale of the manuals may be used to revise and enlarge the scope of the manuscripts. If you wish to find out about charges, place orders, or ask questions concerning the manual, please contact:

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Although this manual is directed toward institutional (and school) food service supervisors at state and local levels, it will also be useful to commercial distributors and packers, food service operators in the commercial sector, as well as administrators and others concerned with food distribution and utilization.

James A. Mixon, Chairman
Food Industry Services Group

Storage and Care of Food Products
First Edition, 1986
First Printing, July, 1986

SUMMARY

Food products are stored either for the purpose of staging on a short-term basis until ready for use or holding on a long-term basis from one production season to another. Also some products may be purchased in quantity during periods of plenty to be used later as needed.

At some point after a product is harvested or prepared for market, quality and condition are generally at the most desired peak. The extent to which these attributes deteriorate thereafter depends on:

Time,
Temperature,
Humidity and
Sanitation.

The keys, therefore, to responsible product protection are proper environment, proper stock rotation and good sanitation. Since different products respond differently to these fundamentals, food managers must know the thresholds of endurance of each product (or product groups) and otherwise apply "the rule of reason" in handling and storing foods.

Warehouse Care: The following summary of good practices can serve as a guide for handling and storing food products at warehouses. As can be expected, several of the practices listed are more important than others. The list is not intended to be all inclusive. See text.

- Check food on arrival for condition and correctness.
- Check carrier temperature, particularly if the product is frozen or chilled.
- Check for damage.
- Check for pests, particularly roaches or evidence of rodents before and during unloading.

- Execute the proper receiving reports, indicating any variations from the norm.
- Report variations to carrier driver or agent before vehicle departs.
- Provide adequate space for staging product prior to moving into storage.
- Check temperatures of frozen and chilled items with probe thermometers while in the staging area. See text.
- Attach label to each pallet to assist in proper stock rotation.
- While in staging area, check cartons again for insects (roaches, etc.). (One source of insect infestation in warehouses is via inbound shipments arriving from insect infested warehouses.)
- Rotate stock on a FIFO (First In, First Out) basis.
- Handle stock with care, particularly with fork trucks to minimize damage.
- Retrieve damaged merchandise immediately. Recoup the usable portions and move to a remote area. Dispose of unusable portions.
- Provide the proper temperature and humidity environments as specified in the storage tables in this manual.
- Equip each refrigerated area with a remote dial thermometer with a temperature sensing bulb, properly located inside the room. See text.
- The dry grocery area should be well ventilated with forced air.

- Regular care grocery items should be kept at 50°F minimum in winter and 70-80°F in summer depending on the item.
- Special care dry items may have to be stored in rooms which are air conditioned in the summer to 60-70°F, depending upon the item.
- If special care or other dry items are placed in a freezer or deep chilled room for storage, they should be tempered back to room temperature progressively before shipping.
- Warehouse space should be adequate to minimize damage and promote good warehouse sanitation.
- Place storage racks and bulk stocks of product 12-18 inches from the walls and paint a white or yellow stripe at the floor-wall junction to facilitate cleaning and detecting and controlling pests.
- Use a mechanical heavy duty scrubber to frequently clean aisles and open areas in grocery rooms and coolers.
- Use sweeping compounds to frequently clean aisles and open areas in freezers.
- Apply concrete sealing compounds to aisles and open spaces semi-annually to minimize dusting of floors and to make cleaning easier.
- Well-lighted warehouses are easier to keep clean and promote optimum conditions for the control of pests.
- Maintain a positive program of rodent control by using mechanical or bait traps throughout the warehouse.
- Maintain a positive program of insect control by spraying or fogging regularly.

- Maintain a positive program of bird control by taking measures to keep them out of the building and installing flashing lights whenever appropriate.
- Keep employees' food out of the warehouse.
- Train employees in proper sanitation and pest reporting methods.
- Maintain a rigid management sanitation inspection program and take appropriate action to correct deficiencies.
- Keep salvage and returned goods isolated. If possible, do this outside the warehouse itself, since returned goods can bring insects and rodents into the warehouse.
- Cereals require extra care. As soon as a bay or an appreciable floor area is emptied of stock, particularly cereals, the area should be swept thoroughly or vacuum cleaned and sprayed with residual type insecticide before new stock is brought in.
- All cereal must be rotated and close surveillance maintained on slow moving stock. Remember that any cereal products over three weeks old are suspect during warm months and must be checked frequently for signs of insect infestation.
- Cut down on the size of stocks of flour and other cereal products during hot, humid periods.
- Be sure that products intended for human consumption, especially cereals, are never co-mingled with cleaning supplies or other chemicals.

Kitchen Care: Kitchen facilities at food prep sites are designed for staging products for short term storage only. Thus storage rooms at these sites are not intended for long-term storage. Rapid turnover of stock and stock rotation are the "watch words" in staging food products at food prep sites.

Another "special watch word" at food prep kitchens is "food handling", since it is at this point in time when containers are opened and foods are exposed to "the elements" and the importance of sanitation takes on added meaning.

The following summary of good practices can serve as a guide for handling and storing food products in kitchens. As can be expected, some of the practices listed are more important than others. The list is not intended to be all inclusive. See text.

- It is essential to check deliveries as to the correct number of pieces before the driver is released.
- If the delivery is a one-time event, further checks must be made before the ticket is signed (receipted) and the driver departs.
- Check the conditions of the load. If any of the product is frozen or chilled, is the vehicle adequately refrigerated?
- The food service operator can exercise some leverage in making post delivery claims if deliveries are made by a constant supplier on a repetitive basis.
- Check deliveries further for proper items. Have the supplier list the packers' code numbers on the delivery tickets and check these numbers against numbers on the cases.
- Check containers for damage and condition.

- Check product temperatures if frozen or chilled.
- Check uncoded products such as fresh meats and produce for quality and condition.
- The quality and condition of canned and packaged goods can be checked at the time the containers are opened.
- Check cartons for evidence of pests. (Roaches and other insects often infest kitchens by arriving with deliveries.)
- Adequate storage space for frozen, chilled and dry grocery items is essential for good stock organization and rotation and for exercising proper sanitation procedures.
- Storage rooms must have adequate shelving. In freezers and coolers, shelving and product must set off of the walls at least a few inches to allow for proper air circulation.
- In as far as practical, remove cans and packages from master cartons before stacking on shelves. The exclusion of master cartons from the storage room (and cabinets) helps eliminate the chances of product contamination.
- Hold freezers and coolers at proper temperatures. This can usually be done by placing thermostats at proper settings and keeping the doors closed. It may be necessary to install fans in dry grocery areas to promote proper air circulation, particularly in warm climates.
- Refrigeration units in chilled rooms should be equipped with automatic defrost so that temperatures can be held below 38°F when necessary.
- Hold coolers in which milk is being held at around 34°F to deter souring of the product.

- Some produce items may be ripened faster by storing in the dry grocery area.
- Make sure that you know how and where to store each produce item.
- Some freezer items such as bulk ground beef and cherries should be tempered in a cooler until ready for use.
- Thaw frozen items before preparing for cooking only when necessary.
- If a grain item such as corn meal arrives frozen or chilled , hold it in a cooler until ready for use, if practical; if not, place the product in the dry grocery area, but schedule for use at an early date.
- Freezers and coolers must be equipped with remote dial thermometers.
- Clean storage areas daily and wash down coolers occasionally, particularly if mold accumulates on walls or floors.
- To prevent food borne illnesses, in handling foods from the pantry, to the food prep area, to the serving line and to the table, follow these suggestions:
 - * Limit the introduction of microorganisms into the food by washing and sanitizing your hands before handling food; wash all raw foods, clean and sanitize all food equipment, utensils and contact surfaces.
 - * Destroy microorganisms that may have contaminated food by properly cooking the foods, reheating precooked food rapidly to above 140°F, and holding all hot foods above 140°F.
 - * Limit the growth of microorganisms by promptly refrigerating leftovers, rapidly chilling hot foods by using shallow containers, and checking refrigeration to ensure proper temperature control.
 - * When in doubt, throw it out.

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PREFACE

The information presented in this manual is intended as a guide for public agencies and commercial establishments participating in nutrition programs administered by the Food and Nutrition Service of the U. S. Department of Agriculture. Although these guidelines are directed principally toward receiving, storing and handling USDA donated foods, they can also be used as a guide for the storage and care of commercially purchased foods.

When an eligible agency agrees to accept donated foods from the USDA, it also agrees to accept the accompanying obligation of providing reasonable care for the products so as to prevent losses or deterioration of quality and condition. Claims will be established in most instances whenever such losses or deterioration are found to have occurred, from the time the product is accepted at point of arrival until it is placed on the serving line in an agency cafeteria.

These guidelines for receiving, storage and care of food products, represent acceptable practices followed by the public and private sectors. If a recipient agency follows the guidelines set forth on these pages, it is unlikely that losses or deteriorations will occur. However, the professed following of these guidelines does not relieve recipient agencies of the responsibility for providing (or contracting to provide for) adequate product protection.

The contents of this manual are divided into three parts. Part I addresses the procedures and facilities required to properly receive, store and care for food products at arrival or intermediate warehouses. Part II is a table of recommended storage temperatures, etc. for various items, as well as expected shelf life. Part III addresses the procedures and facilities required to properly receive, store and care for food products at food preparation kitchens.

Although this text is prepared specifically for use by schools and other government funded agencies, the contents may be equally beneficial to the private sector.

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PART I
WAREHOUSE CARE

INTRODUCTION

Parts I and II of this manual are directed toward food agencies, school districts, institutions and other recipients which either operate their own warehouse facilities or contract for warehousing services.

If you do not use an in-house or a contractor's facility , you may want to skip over Part I and proceed to Part III, which addresses in some detail the procedures for properly storing and caring for food products in food prep kitchens.

Part I addresses the following procedures:

- Receiving,
- Storing,
- Controlling contamination and damage,
- Delivering products to food prep sites,
- Managing the warehousing and delivery functions

RECEIVING

Receiving is an important and critical function in the storage and handling of food because at the point the product is accepted, title and/or responsibility passes from the shipper to the recipient. Evidence of this transfer is accomplished by the consignee signing a delivery ticket (bill of lading). This attests to the fact that the particulars shown on the delivery document are correct and proper and that the product is accepted in good condition.

Once a delivery ticket has been signed and attested to and the transport carrier has departed, it is difficult to claim that the delivery was short, the product was not in proper condition or the delivery was otherwise improper. It is essential, therefore, that a recipient verify the accuracy and condition of the product prior to the departure of the carrier.

Furthermore, it is important that a carrier's representative (driver or agent) attest to the problems encountered with a delivery load. If a problem cannot be resolved between the recipient and the carrier's representative, the recipient (and/or the carrier's representative) should call the supplier or his designated representative.

There are several procedures to pursue in receiving food products. These procedures are related principally to (a) correctness and condition of the load on arrival and (b) carrier temperatures.

Correctness and Condition of the Load

- Upon opening the door of the carrier, check the general condition of the load as may be judged by sight or smell.
- Does the load match the delivery ticket? Before unloading, make sure that the product in the carrier is the same as the product listed on the delivery ticket, with reference to item description, style, pack and size of container, and grade if applicable. You would not want to unload what you thought was green beans in No. 10 (institutional) cans only to find that what you have is No. 303 (retail) cans.

- Is the proper consignee taking delivery? Before opening the carrier verify from the delivery ticket that the load is consigned for you and not to someone else.
- Is the loading arrangement proper ?
 - * Has the load shifted to the point where damage may be apparent?
 - * Is there any evidence of off-odor that might indicate spoilage or chemical contamination?
- If the load is refrigerated, is there any evidence that improper temperatures may have occurred during transit?
 - If frozen, is the product solidly frozen?
 - Is moisture present in the carrier? Moist cartons may indicate that the product (frozen or chilled) has been mistreated.
- Is there any evidence that pests (roaches, mice, etc.) may have been loaded along with the product from the shipper's warehouse? When pests arrive with inbound stock, in-house control problems are compounded.
 - * Shipments must be checked for rodent defilement, damaged packages, insect activity, water damage and mold, objectionable odors, oil and grease deposits and bird droppings, feathers or nesting materials. It is not unusual for a packer to be returned goods from a sophisticated warehouse, only to redirect them to a warehouse with a history of blindly accepting everything.
- Is the count of the product correct? This can best be done by staging the load on pallets in the receiving area. Traditionally, cases are stacked on pallets in standard layer counts and layer heights. Thus, the cases per pallet can be verified by counting the number of cases on the top layer and multiplying by the number of layers, i.e., 7 cases per layer x 8 layers high = 56 cases per pallet.

Once full pallets have been counted and the cases counted on partial pallets, the total number of cases can be quickly verified. For example, a 40-foot trailer will accommodate 18 pallets (48" x 40").* Thus 18 pallets x 56 cases per pallet equals 1,008 cases plus any additional cases on a partial pallet.

- Check the temperature of frozen and chilled merchandise after unloading. This can be done while the palletized merchandise is in the inbound staging area. Temperatures can be checked by inserting and wedging a long stem (7-9") probe thermometer tightly between two cases in the center of the top layer of a stack. Leave the thermometer in for about 5 minutes before reading. Probe thermometers are available in several different styles. The rule of thumb is not to accept any product that has an arrival temperature of above 10°F, using the probe thermometer method. See Supplement I-A.
- Tag pallets to promote stock rotation. The usual procedure is to attach a 5" x 7" colored tag card to a "front" case (usually the case on the lower right corner) on the bottom layer of each pallet. A colored tag may be used with a different color (or shade) representing each month. The month of arrival is printed on each tag with the date of arrival stamped (or written) on each tag. See Supplement I-B.

Carrier Temperatures

- Check the in-place thermometers on refrigerated railcars and trucks before unloading. This is not a substitute for checking temperatures of palletized merchandise after unloading, since thermometers on railcars and trucks are often out of order or have been tampered with. One way tampering can be done is to place the temperature sensor end of

* Since larger trailers are now permitted in many states a trailer may load more pallets (20-22).

the thermometer (thermocouple) directly in the path of the air coming from the refrigeration unit before arrival. This will cause the thermometer to indicate the temperature of the coil surface rather than the temperature of the return air which represents more closely product temperature.

Check for possible air blockage inside of railcars and trucks. If air circulation has been inadequate during transit product temperatures may be above acceptable levels.

Check frozen and chilled food products arriving by rail or truck for dunnage or ventilation space between the floor or walls and the load. If space for air circulation is not apparent, then check the adjacent product for appropriate temperatures.

- Check for evidence of temperature violations on the hauling of grain products, particularly if the product was transported through hot regions or during periods of high temperatures.

Corn meal, flour and other grain products are subject to weevil infestation if held or transported at sustained high temperatures (above 80°F). At high temperatures, weevil eggs in unpasteurized grain products will incubate and hatch.

When grain products are transported during periods of high temperatures the normal procedure is for the carrier operator to open air vents on the carrier to prevent unfavorable heat escalations.

If a carrier arrives during hot weather with the vents closed, the load should be examined for weevil infestation. Even if weevils are not found, it is essential to note on the delivery ticket (or receiving report) the arrival condition of the load because it is possible that, although not apparent on arrival, weevils may show up in the product a few days later. It is important, therefore, to check the product daily for a few days while in storage when such circumstances occur.

- Conversely, if canned goods or other liquid packed products arrive during very cold weather or from very cold regions with the carrier air vents open and/or heaters not working or not in place, the recipient should be concerned about product freezing.

If the product is not frozen on arrival but there is concern that it may have been frozen in transit, particularly on railcars, a note should be made of this suspicion on the receiving report. Often the freezing of canned fruits and vegetables in particular, may not be detected until the cans are opened. A cloudy (off-grade) liquid may be in evidence if prior freezing of canned goods has occurred.

Hidden Problems

Although some items such as fresh potatoes, apples and cabbage may be examined upon arrival for damage or for poor product condition, evidence of such deterioration may not be apparent in packaged goods. Although hidden problems may be apparent, they may not be detected until the containers are opened. Some of the more common hidden problems are:

- | | |
|----------------|-------------------------------|
| - Empty cases* | - Partially filled cans |
| - Empty cans | - Off-grade products |
| - Dented cans | - Torn or damaged labels |
| - Rusty cans | - Thawed and refrozen product |
| - Swelled cans | - Incomplete pallet loads |

Whereas, making claims against shippers for most hidden problems may be easy, some problems are more difficult to resolve. The key is to report problems as soon as they are noted, in which case most shippers will readily make restitution for shortages or damages, or even for quality deterioration.

On the other hand, however, if a claim is made against a shipper for rusty cans, for example, three months after the arrival of a product, there may be suspicion on the part of the shipper that the rusting may have occurred at the recipient's warehouse.

* Arriving in palletized or slip-sheeted shipments.

Reasonable Care

Recipient agencies are expected to take reasonable care of USDA donated foods. Although the term "reasonable care" may have different meanings for different people, the bottom line is that if a recipient agency accepts a shipment it then becomes responsible for the product. It is therefore important that reasonable care be used in accepting the product. This involves the implementation of the guidelines set forth in this manual.

Just as the USDA expects recipient agencies to fulfill their responsibility in a businesslike manner, recipients can expect the same of carriers which deliver inbound shipments.

However, expecting reasonable care does not mean the imposition of unreasonable demands. Such impositions might become counterproductive due to resistance from carrier or warehouse representatives.

Receiving Records

Perhaps the most important part of implementing good receiving procedures is good record keeping. Recipients must make notes on the receiving ticket or forms concerning any variation from the normal procedures as outlined herein. Such notes may come in handy later if questions arise concerning the acceptability of the product on arrival.

If a shipment of USDA donated foods is incorrect, it is essential to execute the proper federal O.S. or D. (over, short or damaged) report (Form FNS-57), as well as make the appropriate notes or corrections on the delivery ticket (Bill of Lading). See Supplement I-C & D. Forward a copy of the adjusted receiving tickets along with appropriate notes with form FNS-57 to the appropriate authorities.

A representative of the carrier must also acknowledge the O.S. or D. report. If shipments come by truck, the driver can acknowledge the discrepancy with his signature. If by rail, then precise notes must be made regarding telephone conversations with railroad representatives, as well as execution of the proper O.S. or D. report (Form FNS 57). A copy of the adjusted receiving tickets along

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O.S. or D. report (Form FNS 57). A copy of the adjusted receiving tickets along with appropriate notes must be forwarded with form FNS-57 to the appropriate authorities.

Recouperables and Disposables

Damaged packages should either be recouped and used or disposed of in an acceptable manner. Most often, the decision as to whether to recoup a product or dispose of it is clearly evident. For example:

- The contents of donated cans which are merely dented can be used. However, the contents of cans which are leaky, pitted, punctured, severely rusted, swollen or dented on the vertical or horizontal seams should not be used.
- The contents of cans which are severely rusted and pitted should not be used.
- Grain products infested with weevils should not be used.
- Grain, pasta and other dry products which are wet should not be used.
- Frozen products which are known to have been partially defrosted for an unknown amount of time and refrozen should not be used.
- Chilled products which show blue mold should not be used. (There was a time when it was customary to scrape blue mold off cheese and use the product. However, recent studies indicate that the roots of the mold penetrate the cheese, thus the wisdom of scraping and using the cheese is questionable).

WHEN THE SAFETY OF A PRODUCT IS IN DOUBT DO NOT USE

- USDA Donated Foods carry a USDA label and thus damaged products (unfit for human consumption) cannot be disposed of indiscriminately.

See FNS Instruction 710-1, Commodities Found Out-of-Condition After Receipt by Distributing Agencies, included as Supplement I-E to this manual.

Requirements for Receiving Space

Space is required for staging inbound products on pallets while they are being checked and made ready for storage. Procedures involve the stapling of a coded tag to a single case on the lower corner of each pallet. This tag indicates the month and day of receipt and is helpful in FIFO* management. Usually a different colored tag is used each month.

During the staging process, pallets may require wrapping with shrink film, strapping or slip-sheeting to stabilize the loads. Some products such as frozen cherries (in 30 lb. tins) do not stack well and must be slip-sheeted between layers with kraft paper or strapped to prevent the pallet loads from tipping and spilling or damaging the cans.

The current "state of the art" is to receive frozen and chilled products into staging areas which are refrigerated. This provision allows adequate staging time to make products ready for storage without fear of product quality deterioration due to high temperatures.

* First In First Out

STORAGE

Once a product has been properly received and signed for, the storage functions begin. These functions consist of:

- Staging inbound receipts
- Transporting products into storage
- Reworking from storage slots to order picking slots
- Staging and checking orders for outbound deliveries
- Loading delivery vehicles.

While these various functions are being performed, management must give specific attention to caring for products in such a way as to:

- * Minimize damage, losses, waste and shrink, and prevent quality deterioration.
- * Provide procedures for assuring first in, first out (FIFO) procedures.
- * Eliminate chances of infestation or contamination from external sources.

Storage Space Requirements

In order to properly perform the storage functions, a recipient agency should provide adequate warehouse space for:

- Staging of inbound arrivals and outbound deliveries.
- Storing and selecting frozen, chilled, and special care and regular care dry items.
- Ancillary warehousing functions for:
 - accumulating and holding returns and disposables,
 - collecting and storing trash, and
 - providing adequate space (12"-18") behind wall racks and stacks for cleaning.

Generally, storage space should be arranged in an orderly fashion with aisles of adequate width. Product damage often results when space is cramped and aisle turning radii are inadequate. Moreover, cramped space is more difficult to clean and thus may promote product infestation.

Freezers: Space in freezers must be adequate enough to promote air circulation, particularly over and around products, and between products and walls and floors. Space for air circulation is essential for maintaining product integrity, and avoiding quality deterioration.

Freezer rooms should be held at 0°F (Fahrenheit). Room temperature should be measured in the return air. Air coming from evaporator coils in a freezer storage room has a temperature of about -30°F. As this air continues across the ceiling the temperature drops rapidly because of the warmer air rising and the ambient heat penetrating from the roof. At the end of a room opposite from the coils, the air temperature at the ceiling should be about 0°F or below. As the air is drawn back to the evaporator coils across the lower part of the room, temperatures should remain around 0°F.

The most "honest" place therefore, to register room temperature is at the wall near the ceiling (about 3' below), at the end of the room opposite the coils. This wall usually is the same wall on which doors are located.

Temperatures can be registered by using a remote dial thermometer with a thermocouple and cable long enough to extend inside the room and terminate at the desired location. The remote dial can be mounted outside the room near the door. See Supplement I-A.

The most positive method of tracking freezer room temperatures is to install a recording 24-hour clock thermometer in addition to the remote dial unit previously described. The recording thermometer is installed in the same manner as the remote dial unit. It is useful as a backup apparatus to avoid claims due to improper temperatures. See Supplement I-A.

Chill Rooms: The same guidelines outlined for freezer space applies also to chill space, except for temperatures. If a warehouse has only one chill room (cooler), it should be held around 35°F because the qualities of most chilled products are best sustained at this temperature.

Some products however, such as fresh vegetables may suffer chill damage at 35°F, therefore, these products should be held at higher temperatures. Also some products may require higher humidities than those available in single purpose 35°F cooler. If only two coolers are available hold one at about 35°F with a low relative humidity and another at 45°F with a high humidity. Mold can be controlled on high risk items such as cheese by using a charcoal filter apparatus in the cooler room. This is a separately contained unit which filters the air by circulation. The unit, however, must be of adequate capacity to be effective.

Chilled space which is more diversified, may be required for the proper storage of produce and/or boxed, vacuum packed meats. See Part II - Storage Tables.

Dry Rooms: Recipient agencies in temperate and cold climates can use an all-purpose room for dry groceries provided that adequate precautionary measures are taken. However, different dry grocery items demand different environments. Whereas some dry grocery items such as canned goods can suffice with "regular care" others such as bagged grain products require "special care."

Regular care products require all-purpose storage which is well ventilated in warm weather and perhaps heated to 50°F during cold weather. Warehouses with good ventilating systems might well hold temperatures around 70-75°F during warm weather periods, provided that the building, particularly the roof, is well insulated.

To avoid pulling insects into a building, it is important to exhaust air through a power fan and pull air into the building through intake openings equipped with insect screens and louvers.

Special Care Items: In warm climates (Florida, for example) many storers provide air conditioned rooms, held at around 60-65°F for items requiring special care, particularly grain products which are subject to weevil infestation.

Some warehousemen put special care items in freezer or cooler rooms. But this is done as a substitute measure when air conditioned space (which is much cheaper to construct and operate) is not available. Whereas, freezers and coolers accomplish the primary mission of avoiding infestation, storage under these lower temperatures creates other problems. When grain products are removed from a freezer, condensation may cause caking of the product or even bring about minor changes in flavor and texture.

The best (optimum) way to handle dry items stored in coolers or freezers is to treat the products as freezer or cooler items up to the time they are used. However, if this is not practical, the products can be tempered back to room temperature by placing them first in a cooler and later into a 50-70°F area before placing in day storage.

AVOIDING FOOD CONTAMINATION*

Even canned foods should be handled and stored in the most sanitary environment possible. Any situation short of ideal provides at least some chance for product contamination. Although the product inside of a can, for example, may not become contaminated in storage the container might, thus increasing the risk of food contamination (by transfer) when the container is opened.

Food contamination may come from any of four sources:

- Container borne,
- Human borne,
- Pest (rodent, insect or bird) borne,
- Chemical borne

Container borne contamination can be controlled in receiving areas by examining inbound freight for roaches, rodents, insects and droppings. Thus contamination of this type can be detected at the receiving door.

Human contamination can be controlled by providing employees with ample lunch room and other welfare facilities and by having adequate training and supervision programs.

If chemical contamination occurs it is most likely to come from treatments utilized to control pests or from storing food products adjacent to cleaning supplies or other chemicals.

PEST CONTROL

Pest control is obviously more difficult to exercise in warehouses (or kitchens) constructed at ground level than in facilities constructed at platform height. The most common source of pests at warehouses with platforms is with inbound shipments. Therefore, as previously discussed, it is important to include rigid pest control measures in receiving procedures.

* Much of the material in this section is provided by The American Sanitation Institute, St. Louis, MO. 63133.

Any warehouse, however, may be invaded by insects or rodents from cracks and crevices which may exist in the walls, particularly at the floor and wall junctions. It is therefore essential to make sure that all cracks and crevices are sealed.

Cleaning: A good cleaning program is essential for adequate pest control. A mechanical scrubber is essential for cleaning most warehouse areas. Sweeping compounds may be used to clean confined areas, e.g. corners, between racks and walls and in freezers where water scrubbers cannot be used.

Painting: One good way to detect the presence of pests, particularly rodents, is to paint (white or yellow) strips on floors, about 12"-18" wide between racks or stacks and walls. This will aid in detecting pests directly or by means of droppings. Urine can be detected by the use of an ultra violet apparatus. The painted strip should be wide enough to permit the use of a push broom (with a sweeping compound) to clean the area. This "sanitation lane" facilitates cleaning and inspection of spillages; is a revealing background for evidence of filth, pest activity and incipient cracks; and allows easy application of residual insecticidal treatments and enables placement and servicing of rodent control devices and the use of ultra violet lights.

Loose Food: Any loose food caused by breakage or spillage must be removed immediately either by vacuum, sweeping or mopping as circumstances may indicate.

Employees should be forbidden to eat or drink any food on warehouse premises, and certainly not leave wrappers or cans in the warehouse. A lunch room should be provided for eating and snacking purposes.

Pest Control Programs: Effective pest control is primarily preventive and includes the following: (a) maintenance of the building and grounds; (b) good housekeeping and storage practices; (c) stock rotation; and (d) insect, rodent and bird control. Exterior grounds should be maintained free of litter, high vegetation and obsolete equipment which could provide vermin harborage. Standing water should be eliminated to prevent insect breeding, to remove liquid for rodents and to inhibit the development of mold and offensive odors. Outside waste disposal containers should remain covered and be routinely cleaned and treated with an insecticide to control flies and fly maggots. The building should be maintained in good repair to eliminate entry sites for insects and rodents.

Housekeeping schedules should be developed to include the thorough cleaning of all food residues, spillages, waste materials and refuse and the immediate removal of any evidence of pest activity. Accumulations of wastes will attract pests and can be a substrate for microorganism development. Remote areas and hard-to-reach places should be thoroughly cleaned on a regular basis and weekly cleaning of dock load levelers should be scheduled.

Two options may be pursued in initiating pest control programs: (a) use a well trained in-house employee; or (b) contract with an outside firm which specializes in pest control in food warehouses.

Many food warehouse operators also use a third party inspection service, designed specifically for food industry facilities. Such services can be obtained from national firms for a modest fee. These services which involve on-site visits by a professional sanitarian, can provide third party objectivity, as well as reliable training and guidance.

SEVEN BASIC PRINCIPLES FOR GOOD WAREHOUSE SANITATION

- (1) Residual spraying of floors as storage is cleaned away must be carried out, as well as fogging of warehouse, to effect good insect control. As soon as a bay or an appreciable floor area is emptied of stock, particularly of cereals, feeds, etc., the area should be swept thoroughly or vacuum cleaned and then treated with a residual insecticide application before new stock is stored there.
- (2) To facilitate inspection and keep storage away from the walls, storage should be 18" out from the wall, and a white traffic line should be painted with enamel at the floor-wall junction 18" out from and 12" high on the wall wherever possible.
- (3) Keep salvage and returned goods isolated. If possible, do this outside of the warehouse itself, for returned goods can bring insects and rodents back into the warehouse. Maintenance of a good salvage and returned-goods storage area away from all other storage and use of insecticides on this material also will effect better insect control.

- (4) All cereal and feed stocks must be rotated and a close evaluation maintained of slow moving stock, so that it can be watched. Remember that any cereal products over three weeks old are suspect during warm months and must be checked frequently for signs of developing insect infestation.
- (5) Cut down on size of stocks of flour and other cereal products stored during hot, humid summer periods.
- (6) Remember the Warehouse Manager's Inspection is a very important part of the sanitation program. Do not make superficial inspections. Make thorough inspections, using a bright light, and sign the "Warehouse Manager's Inspection Form" only if you feel you have really made such an inspection.
- (7) Be sure that cereal stock for human consumption, and/or other edible products, are never co-mingled with cleaning supplies and other chemicals.

Pest control programs are directed toward three types of pests: rodents, insects and birds, as follows:

RODENT CONTROL

A lack of good rodent control programs in food warehouses is a prime cause of criticisms by regulatory agencies. Not only are rodent excreta, urine, trackings, and gnawing a major source of stored product contamination but these pests are carriers of ectoparasites which transmit several diseases to man. Rodent proofing techniques are the first line of defense. Caulking avenues of rodent ingress around pipe and wire portals, screening (16 mesh) roof ventilators, floor drains, and "flashing" door bottoms are effective controls. Other control principles which involve the elimination of food and harborage for these pests are as follows:

- Check the warehouse perimeter for burrows:
 - * Place steel wool or crushed glass into suspected burrows and seal,
 - * Treat burrows with calcium cyanide dust, applied with a hand pump gun, according to label directions.

- At the exterior, use anti-coagulant baits in "tamper proof"; enclosed bait stations placed in strategic areas such as ground level doors or ramps and around warehouse perimeter at 50 foot intervals.
 - * Placement of stations should be such as to avoid damage and accidental bait spillage that could be tracked into the stored product zone.
 - * Paraffin-impregnated cakes (blocks) placed in metal stations are suggested where weather elements adversely affect bulk and pelleted cereal (anti-coagulant baits).
- Along the interior floor/wall junctures, utilize metal snap traps with extended triggers, automatic wind-up traps, and metal bait stations with anti-coagulant baits or combinations thereof. See Supplement I-F.
- All rodent control devices (stations and traps) should be numbered (or their locations coded accordingly) (see Supplement I-G) and this information plotted on a master placement chart or map of the warehouse.
- Develop a "rodent inspection form" to record activity, "catches", servicing (cleaning and replenishing bait), and notations on broken, missing or damaged devices.
 - * A copy of the monthly report should be submitted to the warehouse manager.
- Traps should be emptied and reset at least twice a week and bait stations examined weekly.
 - * Empty, clean and replenish each station at least once a month or as needed.
 - * Check both compartments of the automatic mouse traps. Remove and dispose of captured rodents.
 - * Snap traps can be baited with such materials as peanut butter, cheese, cotton or candy gum drops.
 - * Check rodenticides for insect infestation and the floor area beneath the bait stations for insects.
 - * Clean up any bait spillage immediately.
 - * Intensify the trapping and baiting in such vulnerable areas as salvage, re-work, baler, returned-goods zone, and trash disposal.

- Check for rodent urine, hair and excreta contamination with an ultra violet (black) light. See Supplement I-H. Test should be made primarily in painted floor areas.

INSECT CONTROL

Insects are controlled principally by spraying. The theorem is that insects come in contact with the spray residual and are poisoned. Because of a larger number of species the procedures for insect control sometimes is more complex than for rodent control.

Residual spraying of floors as storage is cleaned away must be carried out, as well as fogging of warehouse, to effect good insect control. As soon as a bay or an appreciable floor area is emptied of stock, particularly of cereals, feeds, etc., the area should be swept thoroughly or vacuum cleaned and then treated with a residual insecticide application before new stock is stored there.

The following program for insect infestation prevention and control is quoted directly from "The Warehousemen's Handbook for Processed Commodities" published November 1983 by the U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, P.O. Box 205, Kansas City, MO 64141.

This control program is drawn up primarily as a suggested guide. It embodies practices and procedures which are beneficial to most warehousing operations which involve commodities that are susceptible to insect infestation and damage. The program is based on what is considered to be the best current information available, but in the event the program is followed, the Department of Agriculture does not in any way assume responsibility for its effectiveness in preventing or controlling insects, or for any other resultant effects.

The foundation of a sound insect prevention and control is the practice of proper housekeeping and sanitation. The following outline covers only the general and basic considerations in preventing and controlling insect infestation hazards in warehouses:

Insect Control Check List

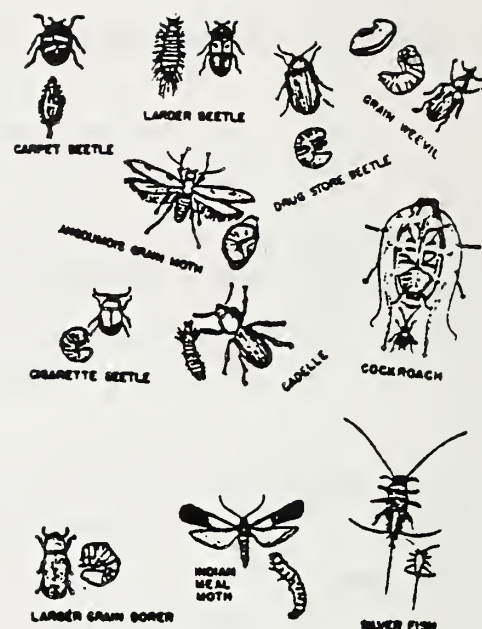
- Keep insects out!
- Use a heavy-duty industrial cleaner (scrubber) at regular intervals to clean the floors.
- Use a vacuum cleaner on ledges, crevices and window sills.
- Do not permit dust, lint or other debris to accumulate.
- Provide space around stored items to permit the performance of inspections and application of sprays.
- Dispose of all dirt and waste material promptly.
- Clean pallets and other equipment to prevent the establishment of areas conducive to insect growth.
- Designate one employee to be responsible for insect prevention and control.

Correct Construction Deficiencies

- Eliminate or fill with a suitable caulking material all cracks and crevices in floors, walls and around window and door openings.
- Eliminate, wherever possible, dead spaces in walls and corners where lint, dust or dead insects may accumulate and provide breeding areas for insects.
- Provide ample light throughout the warehouse. The larva stages of the insects most commonly found in warehouses are repelled by light and are found mostly in dark corners or under debris.

Some Representative Insect Pests

The illustration shown herein, although not to scale, represents a variety of insects known to infest food products. The adults are usually attracted to light and are most often found around windows and on window sills. The larvae are usually found in dark closed areas. Searches for larvae should include cracks and joints in floors and walls and the creases or seams of containers.



Use of Insecticides

The preferred general purpose insecticide is a malathion residual spray prepared from a 57 percent malathion emulsifiable concentrate or a 25 percent wettable powder. Only premium grade malathion should be used as certain impurities in the lesser grades may cause the development of an unpleasant odor with aging.

Prepare the spray solution by mixing either 1 pint of 57 percent emulsifiable concentrate or 1 1/2 pounds of wettable powder with 2 1/2 gallons of water. The wettable powder spray will cause some spotting, but is the most effective type when sprayed on absorptive or porous surfaces. Apply the spray at intervals of every two months during periods when temperatures are above 40°F.

Apply the malathion spray in all sections of the warehouse, but restrict applications to those places or surfaces where insects might hide or crawl, such as in corners, cracks, edges of floor, lower part of walls, under platforms, and protected places underneath and behind articles. Use spraying equipment that will produce a coarse spray with a minimum of drifting mist.

It is suggested that warehousemen with CCC-owned milk in storage, fog spray throughout the spring and summer months to ensure insect free storage. Protect the stored food products by covering with paper or tarpaulins during the

spraying. Use only approved insecticides to prevent contamination of the food products.

Malathion residual spray is effective against a wide range of insects, and is the most effective insecticide evaluated to date for the control of dermestids in food storage areas and is safe to use if applied as prescribed.

If you are not familiar with insecticides, obtain the advice of a reputable insecticide firm, pest control firm or State or Federal entomologist. Also see Supplement I-I (i).

Food products must not contain either insects or insecticides. Do not mix or store insecticides in food storage areas. "Red Label Chemicals" should not be stored in the same building with NFD milk. In applying insecticides, avoid unnecessary skin contact and breathing of spray solutions or dusts."

CONTROL OF BIRDS

Bird control measures must conform to all Municipal, State and Federal regulations. As in the control of rodents, birdproofing techniques are prerequisites for supplemental physical and chemical controls. "Seal out bird invaders" since they are carriers of infectious diseases. To seal out birds, pursue the following preventative measures:

- Eliminate all bird nests from the warehouse structures as well as from any adjacent trees or bushes on the warehouse grounds.
- Remove vines from the exterior walls of the warehouse. Such decorative vegetation may serve as a roosting and nesting site for nuisance birds.
- Provide screens for all windows to be left open; screen vents and ventilators and seal-off roosting sites such as rafters, eaves and conduits.
- Close dock doors when not in use.
- Prevent birds from roosting at dimly lighted wall/ceiling junctures by the use of revolving amber lights.

- * In areas inaccessible to the lights, apply a sticky adhesive type repellent to the roosting sites of the structures.
- Metal quill barriers can be useful in eliminating bird roosts in extremely high or inaccessible sites.
- Nylon or plastic-coated paper netting can be a helpful bird barrier, when suspended from the ceiling or roof of dock areas. Strips (2-3 feet wide) of netting should be as long as possible without interfering with dock or rail traffic. Roosting areas beneath canopies or overhangs in some instances, can be sealed with chicken wire or hardware cloth.
- To control populations of nuisance birds, the use of grains or seeds impregnated with a bird management chemical can be effective. Birds ingesting this material produce flock-frightening symptoms.
 - * Pre-feeding with untreated grains or seed of the same composition is essential to establish acceptance of treated grain.
- Maintain grounds around rail and truck docks free of spillage - especially cereal base products - which attract birds.

SANITATION MANAGEMENT

The development of an effective preventive sanitation program for a food warehouse is essential for the control of potential problems before they reach the consumer. The ingredients of such a program include top management commitment and participation, a designated Warehouse Sanitarian, an incoming goods inspection program, a Sanitation Committee, proper scheduling and record keeping, and employee sanitation training.

By virtue of the "Park Decision" handed down by the Supreme Court, top management is held responsible for the development and maintenance of an effective warehouse sanitation program, in compliance with federal FDA regulations. Management should provide education and training to warehouse personnel by such means as on-site mini-seminars, sanitation workshops, manuals, etc.

In addition to funding training, the appointment of a Warehouse Sanitarian is vital. The Warehouse Sanitarian coordinates control programs and performs daily inspections. On these tours, the cleaning/housekeeping program should be evaluated and the employees queried for reports of any evidence of pest activity.

Employee Training: Warehouse employees must be trained and motivated, making them aware of their integral responsibility in protecting food products. A written policy should be developed, posted and enforced on pilferage and consumption of products; designated eating, drinking and smoking areas; and the reporting and prompt removal of evidence of pests. The display of sanitation posters in the warehouse, locker and lunch rooms is an effective means of continuously reminding employees of proper sanitary practices.

A preventive sanitation program can be an effective way of safeguarding food products in compliance with government regulations. It also makes good business sense to do everything possible to protect investments and ensure that products will reach food prep sites in the best possible condition.

STOCK MANAGEMENT

Good stock management is essential to (a) control product damage and quality deterioration, and (b) maintain accurate accountability of inventories.

CONTROLLING DAMAGE

Not only is it wasteful to damage products, but spillage may attract pests if the area is not sanitized immediately. Moreover, recipient agencies may be subject to claims for excessive damage to USDA donated foods. The following check list may be helpful in minimizing damages to food products.

- Exercise care in moving, handling, storing products to avoid damage and resultant spillage.
 - * All spillage should be removed immediately, as it occurs, "Pick It Up-Don't Pass It Up".
 - * Tape torn bags and bales and remove damaged containers as soon as possible.
- Implement a stock rotation program such as the first-in, first-out (FIFO) sequency to prevent product deterioration.
 - * Proper color-coded rotation stickers should be readily visible and affixed to the bottom tier of product on each pallet.
 - * Periodic report "red flagging" over aged stock.
- Segregate food products and food containers/enclosures from non-edible commodities such as cleaning supplies.
- Protect the exposed tops (lift-tab end) of canned beverages, not protected by packaging film or a slip sheet over the top tier of the cans on each pallet.
 - * Check that the protective sheets are replaced as partial pallets of commodities are removed from stock.
- Segregate damaged merchandise and food containers from the general food storage areas.

- * Process salvageable products separately. Such products are over-exposed to insect and rodent infestation and accordingly, supplemental pest treatment may be warranted, such as daily fogging with a pyrethrin-base formulation.
- Inspect both refrigerated and frozen food storage areas for evidence of thawing and mold/slime deposits, especially on wall surfaces.
- Provide a warning signal light for freezer and cooler rooms in case of mechanical failures which may result in temperature escalations.
- Major causes of damage in warehouses can be traced to four areas^{*}:
 - * Merchandise trapped in the aisle,
 - * Merchandise jammed or penetrated by forks,
 - * Poor receiving and loading practices and
 - * Carelessness in stacking product
- Instruct employees, as follows:
 - * Observe traffic patterns and directions in aisles at all times.
 - * Avoid horseplay and other distractions.
 - * Place, don't toss, damaged cases aside to assure maximum product recovery.
 - * Keep cases of glass goods upright, if damage occurs, to prevent leakage.
 - * Take damage to the salvage area immediately.
 - * Operate equipment at a safe, reasonable speed, consistent with the area of operation.
 - * Forklift operators should be instructed to:
 - Take extreme care in centering forks so they enter the pallet, not the merchandise.
 - Be alert to overhanging merchandise. If it is not square on the pallet straighten it.
 - Correct leaning pallets of merchandise before attempting to stack in a rack system.

^{*} Courtesy Southwest Cold Storage, Phoenix, AZ 85043

- When leaving a truck unattended, forks must be fully lowered, controls neutralized and engine turned off.
- Driver shall be required to look in the direction of, and keep a clear view of, the path of travel.
- Under all travel conditions, the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- Reduce speed to a safe level when negotiating turns.
- Always keep forks on a moving truck within two inches of the floor.
- Never use the direction changer for a brake.
- Avoid wet and slippery floors.

(Permit only qualified operators to operate fork lift trucks.)

- * Receiving personnel should be instructed to:
 - Know the height and stacking patterns before loading pallets.
 - Avoid use of defective pallets, for example, with protruding nails.
 - Keep pallet patterns tight for the benefit of the forklift operator.
 - Use strapping, shrink film or slip sheets to tie unstable loads.
- * Order pickers should be instructed to:
 - Pick cases from the top of the pallet in an orderly fashion and avoid honeycombing or undermining.
 - Place, don't drop, merchandise on the selection pallets.

INVENTORY CONTROL

Two methods of inventory are necessary at food warehouses. These are: computer (book) inventory and physical inventory. Inventory controls are necessary for several reasons:

- Financial control,
- Accounting control,
- To maintain stock at adequate levels, and
- Warehouse space management.

Computer Inventory

Computer inventories are maintained as a perpetual basis primarily for the purpose of ordering resupplies, planning for product utilization and warehouse space management. Computer inventory can also be used as a basis for financial planning and to provide usage reports on donated and commercial foods. These reports can indicate at year-end or at designated intervals the following:

- Amounts of an item received to date,
- Amount shipped (or used) to date, and
- Amount on hand on any given date.

Each item in the computer should carry a delivered cost so that the values of inventories can also be determined at any given time. The cost value can be updated to conform to the latest delivered cost.

Year-end computer inventory reports can be converted into utilization reports, whereby the State and or the Federal authorities will know the quantities of each item issued during the year to each agency. Whereas, year-end utilization computer reports, as indicated above are sufficient for accountability purposes, when used in conjunction with year-end physical inventories, monthly utilization reports may be generated for the purpose of satisfying the requirements of USDA - FNS Form 155. This form has to be submitted monthly by State authorities to regional FNS offices.

When donated foods are accepted at a recipient agency's facility, whether a food prep site or a central warehouse, the product is considered to be issued. Moreover, when a product arrives at a third-party warehouse, commercial distributor or public warehouse preallocated the product is considered to be issued with the third-party warehouseman acting as agent for the recipient agency.

If, on the other hand, a product arrives at a warehouse unallocated, the inventory status must be reported on form 155. For example, some States hold bonus and some Group B items in perpetual inventories in distribution warehouses for recipient agencies to withdraw as needed in accord with their entitlements.

To satisfy the requirements of the Form 155 on products which are issued after arrival the third-party warehouseman must track the in and out movement of each inventory item by programs, with respect to the:

- Total amount on hand at the beginning of a month
- Total amount issued to each program and
- The total amount on hand at the end of the month.

It is not necessary for the third-party warehouseman to report issues to each agency on the monthly reports, since this will be done at the end of the year when reconciliations are made.

When inventories are carried in third-party warehouses on a perpetual basis, it is necessary for State authorities to review computer inventory levels on a monthly basis so as to adjust, up or down, orders which have been placed or may be placed with the FNS regional office.

Physical Inventory *

- For USDA donated foods, physical inventory is necessary at year end to determine if there are any overages on hand. Whereas, computer inventory may show zero balance, residual merchandise might be on hand. This merchandise will have to be either allocated and issued, or credited to computer inventory for next year's start-up.
- Year-end physical inventory on USDA donated foods is also necessary for reconciliation of accounts. The value of physical overages and shortages must be reconciled for accountability purposes.

Reconciliation is done by taking the sum of the value of the shortages and the sum of the value of the overages and subtracting the smaller from the larger. If the shortages exceed the value of the overages, then either the agency or the contracting third-party warehouse may be liable for the difference, after allowances for inventory shrinkage are considered.

* Courtesy of Southwest Cold Storage, Phoenix, AZ 85043

Physical Inventory Method

- Professional and well-run physical inventories (physicals) can be achieved by:
 - * Pre-planning and coordinating office and warehouse functions.
 - * Rigid pre-scheduled cut-offs and inventory start times.
- The Administrative Manager will control the inventory, and be the final authority in matters pertaining to inventory reconciliation.
 - * "Physicals" will be conducted by the "two blind count" method, utilizing a 3-part inventory card with a pre-printed numerical sequence. See note at end of physical inventory method.
 - * Allow no shipments on the day of the physical.
 - * Stamp bills of lading "before inventory" for one day prior, and "after inventory" for one day after the inventory.
- The Data Processing Manager will, on the morning of the physical:
 - * Run an inventory and pending report after the computer has been updated to "current."
 - * Make a photocopy of each order appearing on the pending report.
 - * Pull the files on the last physical inventory and the adjustment file pertaining thereto.
 - * Submit the above items to the Administrative Manager.
- The Warehouse Manager will, on the morning of the physical:
 - * Assign a warehouseman to attach inventory cards to product (staple to pallet runner) in numerical sequence.
 - * Assure that physical counts are taken by two different people at different times.
 - * Forward first counts to the Administrative Manager in a timely fashion while second count is under way.
 - * Forward second count to Administrative Manager as soon as available.

- The Administrative Manager will:
 - * Extend the first and second counts.
 - * Assemble the first and second counts.
 - * Compare cards for discrepancies.
 - * Return discrepancies to Warehouse Manager for further checking.
- When first and second counts have been re-counted and brought into agreement as necessary, the Administrative Manager will make a physical-to-book comparison, and confer with the Warehouse Manager about any outstanding discrepancies, for possible re-checks.
- The results of the physical inventory will be put into the appropriate format, and a short transmittal note written to accompany the report.
- The Data Processing Manager will make adjustment to inventory as quickly as possible after receiving the "OK" to do so.

Note: There are a number of variations of the "two blind" inventory method, but basically, the system involves two people taking inventory of the same items, independently. The 3-part inventory card consist of 3 duplicated computer printout cards, each card has a sequential card number (e.g. 225, 226, 227). Each card set of 3 parts has identical location and item numbers. One part of the 3 part cards is given to one person and the second part to another. The third part is retained in the computer room. The third part only has the book inventory amount. After the dual inventories are taken the 3 parts of a card are compared for discrepancies.

Inventory Shrinkage

Since errors in food distribution are unavoidable, allowances may be made across the board, for inventory shrinkage - disappearance due to losses, damages, shortages, or undetected overages. Inventory shrinkage allowance in the institutional commercial section is about 1/10 of one percent, which equals an allowance of about one case for every 1,000 cases (a trailer load) handled through a warehouse.

To this end, it is a policy of some packers to "throw on" an extra case for every trailer load shipped to allow for shortages, damages, short-falls, etc.

To this end, it is a policy of some packers to "throw on" an extra case for every trailer load shipped to allow for shortages, damages, short-falls, etc.

At a .001 shrinkage allowance, a firm distributing 50,000 cases per year would earn an allowance for shortages, damage, etc. of 50 cases.

DELIVERY

Recipient agencies are also responsible for the care of products during delivery from warehouses to food prep sites.

The most important part of delivery is to transport frozen and chilled foods in properly refrigerated vehicles. Dual compartment vehicles with moveable bulkheads should be used for all deliveries. In these vehicles the frozen product is stowed in the front of the vehicle and the dry in the rear. The dividing bulkhead is moveable so as to make it easier to load and accommodate varying load ratios.

Chilled items can be placed either in the frozen food or dry grocery compartment depending on the item. Most chilled items can easily tolerate a frozen temperature for the duration of a delivery trip.

Items which cannot tolerate frozen temperatures can be placed in the dry grocery compartment. The moveable bulkhead which divides the two compartments can be equipped with vents so that the dry grocery compartment can be cooled when chilled items are part of the grocery load.

It is important for recipient agencies to remember that transporting frozen and chilled items in unrefrigerated vehicles may be hazardous to the health of meal patrons. Moreover, transporting frozen and chilled foods without proper refrigeration is in violation of the public health laws in most states and contrary to the National AFDOS Code as developed by the National Association of Food and Drug Officials and as adopted by the Food and Drug Administration and the U.S. Department of Agriculture.

When-off loading vehicles at delivery points it is important to move the product into controlled storage areas immediately. Leaving foods exposed to extremes in temperature can be deleterious to the quality and condition of products.

CONTRACTS FOR STORAGE AND DELIVERY

The storage and care guidelines established in this text are applicable whether or not the product is stored or delivered by a recipient agency or whether this function is delegated to a third party.

Often recipient agencies (State and local) delegate the functions of storage and delivery to either a commercial distributor, public warehouse or contract hauler. Although these functions may be delegated, the accountability for the products remains the responsibility of the State or local recipient agency.

If recipient agencies are accountable for the product it is incumbent upon them to hold the contracting distributor or warehouseman accountable for product care. In this respect a recipient agency may pursue two avenues of agreement with the contractor:

- Provide the contractor with a copy of this manual with a stipulation that the guidelines contained herein must be followed.

Although commercial distributors and public warehouse firms are in the food storage business and should be "professionals" in taking care of food, the act of providing a contractor with this manual sends the message to the contractor that the agency also knows the ground rules for good storage and care.

- A contract document for warehousing and/or delivery services should assign total accountability of the product to the contractor. This agreement should state, in effect, that if the contractor receives and accepts 1,000 cases of cheese, he should deliver 1,000 cases in the same condition as received. If not, he has to pay the difference, in cash or in kind, except as may be allowed for inventory shrinkage.

The contract should also include a clause requiring the contractor to carry "all risk" insurance to protect a recipient agency against casualty losses which might be caused by fire or flood.

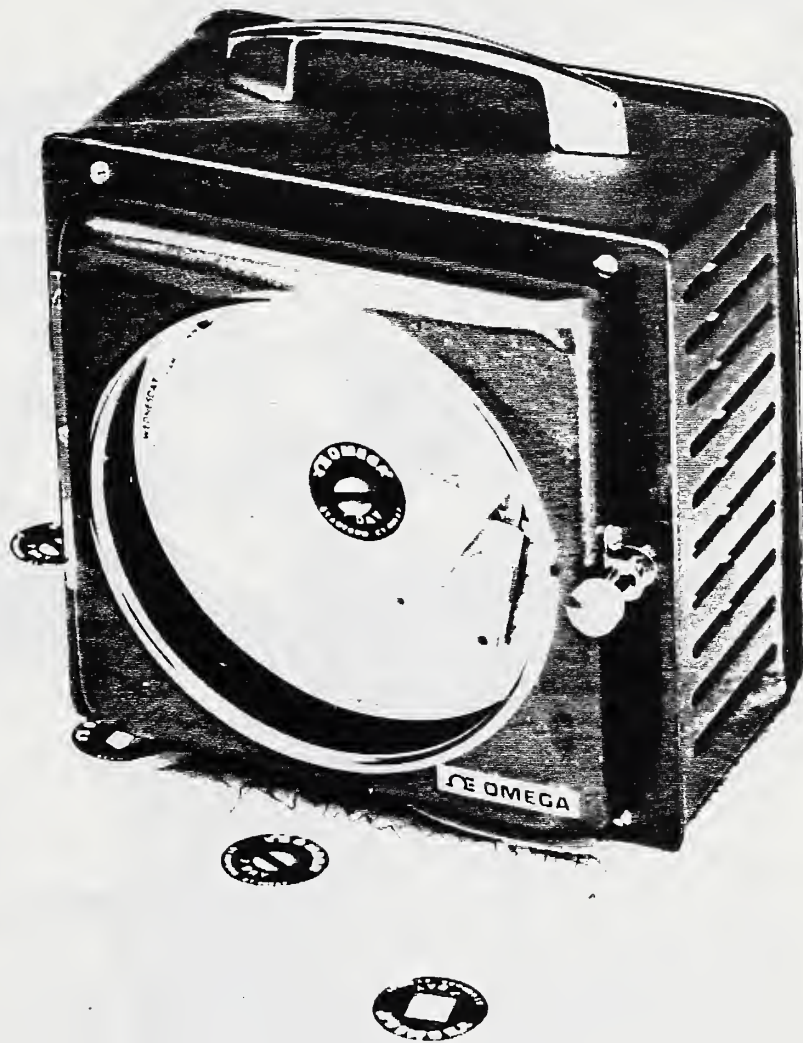
See prototype contracts in Appendix.

SUPPLEMENTS TO
PART I

CONTENTS

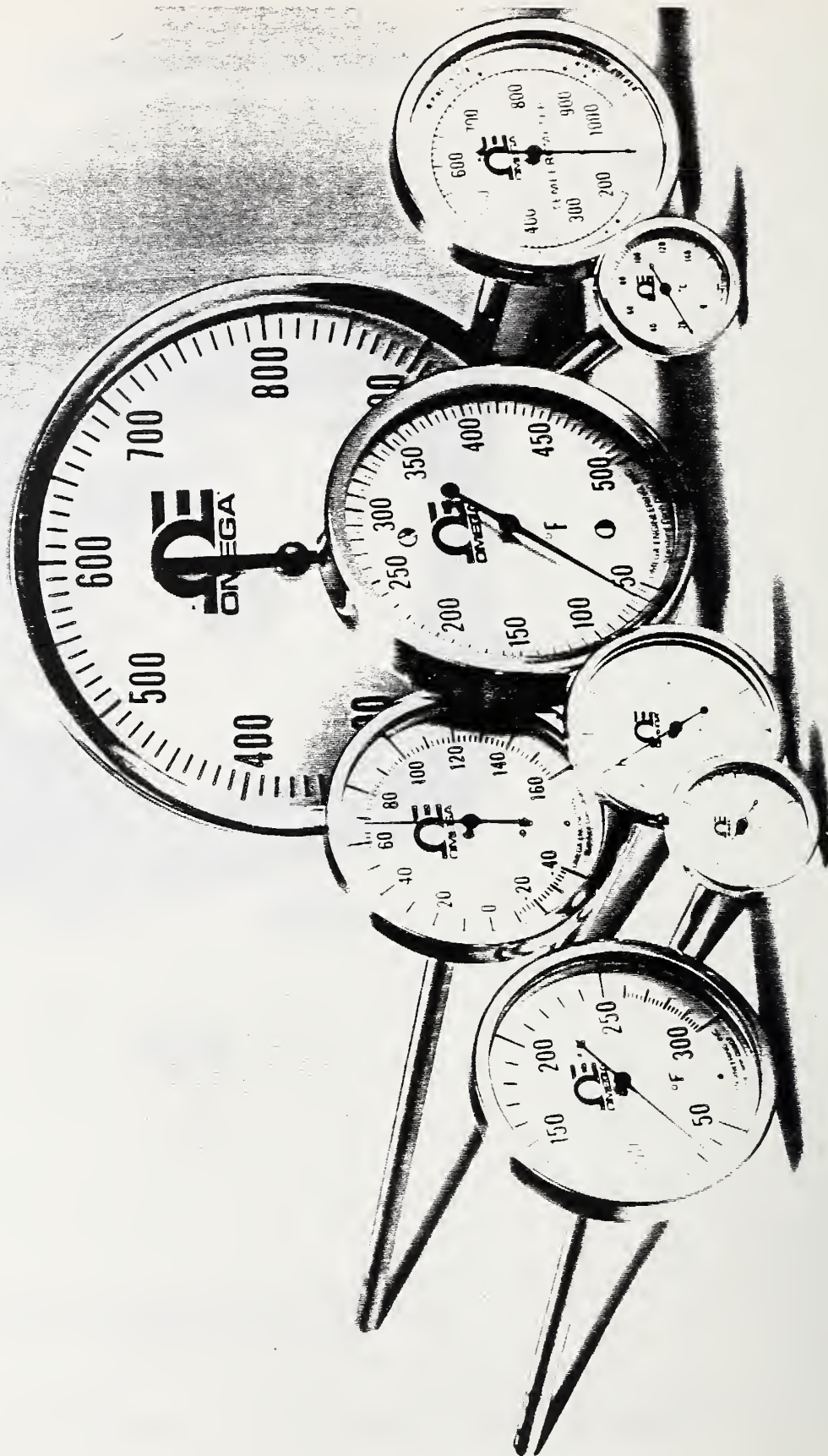
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EXAMPLES OF THERMOMETERS *

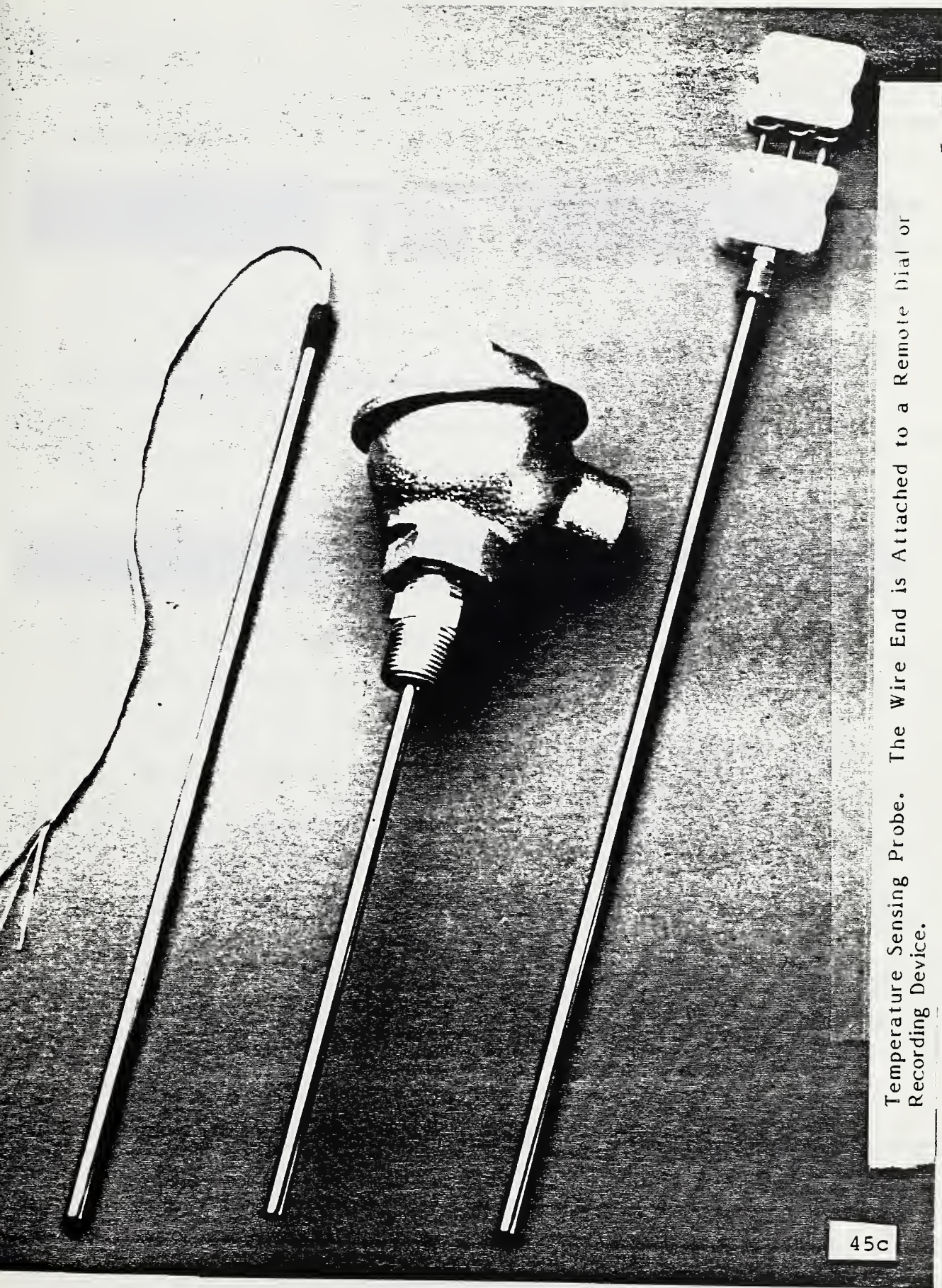


Temperature Recording Device with
Removable Charts

* Courtesy of OMEGA, Engineering Inc. an OMEGA Group Company.



45b



Temperature Sensing Probe. The Wire End is Attached to a Remote Dial or Recording Device.



JULY



***PALLETAG*®**

BY LABELTAPE INC., GRAND RAPIDS, MICH. 49508

Example of Pallet Tag.

Dark is color coded with a different color for each month.
Date is stamped on tag.

STATE FORM

Distributor's Receiving Report
for Donated Foods

INSTRUCTIONS: Agent distributor complete all applicable entries and return this report to the Division of Food Distribution within 24 hours after unloading transport.

PART 1 - IDENTIFICATION

DISTRIBUTOR _____

REGION NO. _____

- A. Item _____
- B. Delivery Order No. _____
- C. State Number _____
- D. Amount Shipped _____
- E. Arrival Date _____
- F. Car Initial and No. _____
(Or Name of Truck Line)

PART 2 - CAR SEAL RECORD

- A. Seals Intact When Car Received? Yes _____ No _____
- B. Inbound Seal No.(s) _____
- C. Outbound Seal No.(s) _____
(If Car Empty - Write "Empty")
- D. Inside Seal No.(s) _____
(If Applicable)

PART 3 - SHIPMENT RECEIPT

- A. Amount shown in Part 1-D received except as noted in Part 4-B.

(Signature for Distributor Contractor) (Date)

PART 4 - EXCEPTIONS

- A. No. Over _____ No. Short _____ No. Damaged _____
No. Recovered _____ No. Dumped _____ No. to Railroad Salvage _____
Net Loss _____ Net Gain _____
- B. Total No. Accepted _____
- C. FNS-57 Attached _____ Will be sent later _____ (Check one)
- D. Attach Bill of Lading _____

FEDERAL FORM

FORM FNS-57
(9-70)U.S. DEPARTMENT OF AGRICULTURE
FOOD AND NUTRITION SERVICEFORM APPROVED
OMB NO. 40-R3692

REPORT OF SHIPMENT RECEIVED OVER, SHORT AND/OR DAMAGED

SEE INSTRUCTIONS ON REVERSE

SECTION A - SHIPMENT IDENTIFICATION

1. NAME OF COMMODITY		2. TYPE OF PACK		3. DESTINATION CITY AND STATE	
4. DELIVERY ORDER NO.		5. NOTICE TO DELIVER NO.		6. CONTRACT NO.	
7. METHOD OF DELIVERY <input type="checkbox"/> RAIL <input type="checkbox"/> TRUCK		8. RR CAR OR TRUCK NO.			
9. PLACED FOR LOADING DATE		10. UNLOADED STARTED (Date and Time)		11. OCEAN BILL OF LADING NO. (if overseas shipment)	
TIME		COMPLETED (Date and Time)			

SECTION B - OVERAGE OR SHORTAGE

12. QUANTITY		A. REPORTED SHIPPED		B. RECEIVED		C. OVER		D. SHORT	
13. OVERAGE SHORTAGE									
A. WHEN DISCOVERED <input type="checkbox"/> BEFORE UNLOADING <input type="checkbox"/> DURING UNLOADING <input type="checkbox"/> AFTER UNLOADING				B. HOW DETERMINED <input type="checkbox"/> UNLOADING TALLY <input type="checkbox"/> PHYSICAL RECOUNT <input type="checkbox"/> ISSUE RECEIPTS				14. CARRIER'S AGENT PRESENT DURING UNLOADING <input type="checkbox"/> YES <input type="checkbox"/> NO	
15. OOR SEAL NUMBERS									
A. INSOUND NUMBERS AND CONDITION OF SEALS					B. OUTSOUND NUMBERS				
16. LOCATION SHIPMENT UNLOADED									
A. RAIL <input type="checkbox"/> DIRECT TO CONSIGNEE (Private siding) <input type="checkbox"/> OTHER (Explain) <input type="checkbox"/> TEAM TRACK VIA TRUCK TO CONSIGNEE					B. TRUCK <input type="checkbox"/> DIRECT TO WAREHOUSE <input type="checkbox"/> OTHER (Explain) <input type="checkbox"/> DIRECT TO RECIPIENT AGENCY				
17. AGENT NOTIFICATION									
A. NAME OF AGENT			C. HOW NOTIFIED <input type="checkbox"/> IN PERSON <input type="checkbox"/> LETTER <input type="checkbox"/> TELEPHONE <input type="checkbox"/> TELEGRAM			18. DID CARRIER'S AGENT RESPOND TO NOTIFICATION <input type="checkbox"/> YES (In what way) <input type="checkbox"/> NO (Explain)			
B. DATE NOTIFIED									

SECTION C - DAMAGE

19. QUANTITY		A. REPORTED SHIPPED		B. RECEIVED		C. DAMAGED		D. NET LOSS	
20. WHEN DAMAGE DISCOVERED <input type="checkbox"/> BEFORE UNLOADING <input type="checkbox"/> DURING UNLOADING <input type="checkbox"/> AFTER UNLOADING									
21. NATURE OF DAMAGE									
22. LOAD SHIFTED OR JUMBED <input type="checkbox"/> YES <input type="checkbox"/> NO		23. DISPOSITION OF DAMAGED QUANTITY							
24. AGENT NOTIFICATION									
A. NAME OF AGENT			C. HOW NOTIFIED <input type="checkbox"/> IN PERSON <input type="checkbox"/> LETTER <input type="checkbox"/> TELEPHONE <input type="checkbox"/> TELEGRAM			25. DID CARRIER'S AGENT RESPOND TO NOTIFICATION <input type="checkbox"/> YES (In what way) <input type="checkbox"/> NO (Explain)			
B. DATE NOTIFIED									
26. IF PERISHABLE COMMODITY, COMPLETE APPLICABLE ITEMS									
A. QUANTITY OF ICE IN BUNKERS		B. POSITION OF VENTS AND PLUGS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED		C. WAS MECHANICAL REFRIGERATION EQUIPMENT OPERATING <input type="checkbox"/> YES <input type="checkbox"/> NO		D. WAS CAR HEATED <input type="checkbox"/> YES <input type="checkbox"/> NO		E. NO. OF HEATERS	
								F. TEMPERATURE ON ARRIVAL INSIDE OUTSIDE	
27. I CERTIFY that the information and statements above are, to the best of my knowledge and belief, true and correct.									
DATE					SIGNATURE OF CONSIGNEE				
28. Receipt of a copy of this report is hereby acknowledged and the facts contained herein are verified.									
SIGNATURE OF CARRIER'S AGENT					NAME AND ADDRESS OF DELIVERING CARRIER				
DATE									

ACTION BY: Food Distribution Division
Regional Offices
Distributing Agencies

Commodities Found Out-of-Condition After
Receipt by Distributing Agencies

I PURPOSE

This Instruction sets forth the policies and procedures to be followed by the Food Distribution Division (FDD), FNS Regional Offices (FNSROs) and Distributing Agencies (DA's) when USDA donated commodities are found to be in questionable condition after delivery. The communication flow, documentation, responsibilities and action required are outlined herein.

II AUTHORITY

Section 250.7 of the Food Distribution Regulations provides that commodities which are found to be damaged or out-of-condition and are declared unfit for human consumption by Federal, State, or local health officials, or by other inspection services or persons deemed competent by the Department, shall be disposed of in accordance with instructions of the Department.

III POLICY

All instances of contamination, deterioration, spoilage, infestation or latent defects involving USDA donated commodities should be reported and acted upon by the appropriate office. The procedures are intended to prevent use of food which is unsuitable for human consumption, to prevent destruction of food that is suitable for program use, and to assure accountability and adequate documentation.

IV RELATED INSTRUCTIONS

FNS(FD) Instruction 709-5, Shipment and Receipt of Foods, provides guidance for handling problems detected prior to unloading.

FNS(FD) Instruction 710-4 Food Alert System, outlines procedures for handling potential health hazards with National or widespread implications.

DISTRIBUTION:
A ,F2,D

MANUAL MAINTENANCE INSTRUCTIONS:
Remove CFP(CD) Instructions 710-1 and 710-2 from Manual. Insert this instruction.

RESPONSIBLE FOR
PREPARATION AND
MAINTENANCE:
. FD-100

Page 1

(IV)

FNS Instruction 410-1, Rev. 1, Non-Audit Claims - Food Distribution Program, outlines procedures for establishing non-audit claims against DAs, sub-distributing agencies, recipient agencies, warehousemen and carriers, and processors and other entities.

VI RESPONSIBILITIES

A DA's shall:

- 1 Check each shipment upon receipt to assure that complete delivery is made and is in good condition, and that any coverage, shortage or damage is reported on Form FNS-57, Report of Shipment Received Over, Short and/or Damaged.
- 2 Instruct all recipient agencies to report products of questionable condition to the DA.
- 3 Determine what action needs to be taken in response to complaints. See section VII, below, for guidance in determining need for additional action.
- 4 Report isolated incidents to FNSRO in writing and forward documentation and/or foreign matter if appropriate.
- 5 Advise FNSRO immediately if circumstances warrant or if a reinspection is desired. See section VII, below, for guidance in determining when a reinspection is needed.
- 6 Place a "hold" on all of the questionable product until advised by FNSRO of action to be taken. For example, a hold must be placed on the commodity any time a reinspection is requested or any time there is a question of wholesomeness. (See FNS Instruction 710-4 for emergency procedures.)
- 7 Confirm all oral communications in writing.
- 8 Dispose of product in accordance with applicable local or State laws or Food and Drug Administration (FDA) regulations or release product for program use after advised by FNSRO.

B FNSRO's shall:

- 1 Determine what action needs to be taken. See section VII, below, for guidance in determining necessary action.
- 2 Determine if complaint is an isolated incident. If so, foreign matter and/or documentation by the State should be submitted to FDD so that it can be called to the attention of the inspector and/or vendor.

(VI B)

3 Take the following steps if the complaint is not an isolated incident:

a Determine if product is still covered under warranty; warranty information is available in commodity purchase announcements. If the product is not covered under warranty, the State must be advised that it may be responsible for reinspection charges if commodities are Federally reinspected. Where there is no established warranty period, FNSRO shall determine that reasonable care has been provided to the product before requesting a Federal reinspection at USDA expense.

b Check commodity specifications to determine if complaint is justified.

c Verify contract numbers and other identifying data by checking Form ASCS-76-1, Abstract and Availability Record or the Shipment and Delivery Report, Weekly Detail.

d Determine if the value of the commodity involved is sufficient to justify a reinspection at Federal expense. (Currently the average cost of a reinspection is \$450.) When a reinspection is not warranted, advise the DA that a sample may be submitted to FDD for an unofficial analysis by the Department, in lieu of an on-site reinspection.

e For cereals and grain products, a State or local health inspection may be requested, the results of which may be accepted for disposal of out-of-condition product. In addition, FDD may designate other products which may be disposed of on the basis of a State or local inspection, with FNSRO approval.

4 Advise FDD immediately if circumstances warrant or if a Federal reinspection is desired. A request for reinspection shall be made by phone and confirmed in writing to FDD. See section VII H, below, for information to be provided.

5 Advise DA of proper action or disposition of product promptly upon advice of FDD. All telephone information shall be confirmed in writing.

6 If some other action by FDD is desired or needed, it is advisable that FNSRO's report in writing to FDD the information required under section VII H, Items 1 through 6, below, of this Instruction. However, even if only minimal information is available from the DA, all information that is available should be forwarded to FDD, in writing.

FNS INSTRUCTIONS 710-1

(VI)

C FDD shall :

1 Determine the appropriate action to be taken regarding out-of-condition commodities, based on information provided by FNSROs.

2 Request a reinspection promptly, when necessary, by the applicable agency and confirm this request in writing.

3 Advise FNSRO's of reinspection results and the proper disposition of product by phone and confirm in writing.

4 Work with the Agricultural Marketing Service or the Agricultural Stabilization and Conservation Service (ASCS) contracting office to arrange replacement of commodities by vendors whenever possible and/or appropriate.

5 Coordinate recovery of damaged food for conversion to another form, or for other purposes such as sale for animal feed, with the ASCS Kansas City Commodity Office, FNSRO's, DA's and other parties.

6 Analyze complaints to determine trends, initiate preventative or corrective measures, and recommend commodity or packaging improvements.

VII GUIDELINES FOR DETERMINING APPROPRIATE ACTION

The following guidelines are to assist FNSROs and DAs in determining the appropriate action for handling a complaint:

A When certain conditions exist, such as exploding cans or infestation of grain products, the DA may dispose of food that presents a hazard to other products stored nearby, after an authorized Federal, State, or local health inspector confirms that the product is out-of-condition.

B When no hazard to other food is involved, the questionable commodity should be segregated and held until appropriate action is determined. FDD will advise of action to be taken.

C When it is necessary to destroy USDA donated commodities, they shall be disposed of in accordance with all applicable State and local laws and FDA regulations.

D When USDA food is destroyed, DA's shall notify FNSRO's in writing within 30 days.

E If product is still under warranty, the FDD should be notified in order to make the vendor aware of the problem for possible replacement or other corrective action.

(VII)

F Isolated incidents, such as a tennis shoe in a canned product, should be reported in writing for information to the vendor but do not require a reinspection.

G Instances of foreign matter such as metal or glass in product usually require a reinspection because of the potential for widespread injury.

H The following information should be provided when reporting a complaint or requesting a reinspection.

1 Name of DA making the complaint.

2 Name of commodity.

3 Contract number and/or plant number.

4 Date product was shipped and/or received, and date of pack.

5 Condition of the commodity (including identification or description of foreign matter, such as insects or pieces of metal), and how the commodity was discovered to be out-of-condition.

6 Delivery order number and quantity received from that contract, notice to deliver number, and lot number, if available.

7 Quantity on hand (number of cases and weight per case) that is assumed to be unusable or questionable.

8 Location of commodity and name and telephone number of contact party.

I If in doubt, a DA should call the appropriate FNSRO, and the FNSRO should call FDD.

GEORGE A. BRALEY
Deputy Administrator
for Special Nutrition Programs

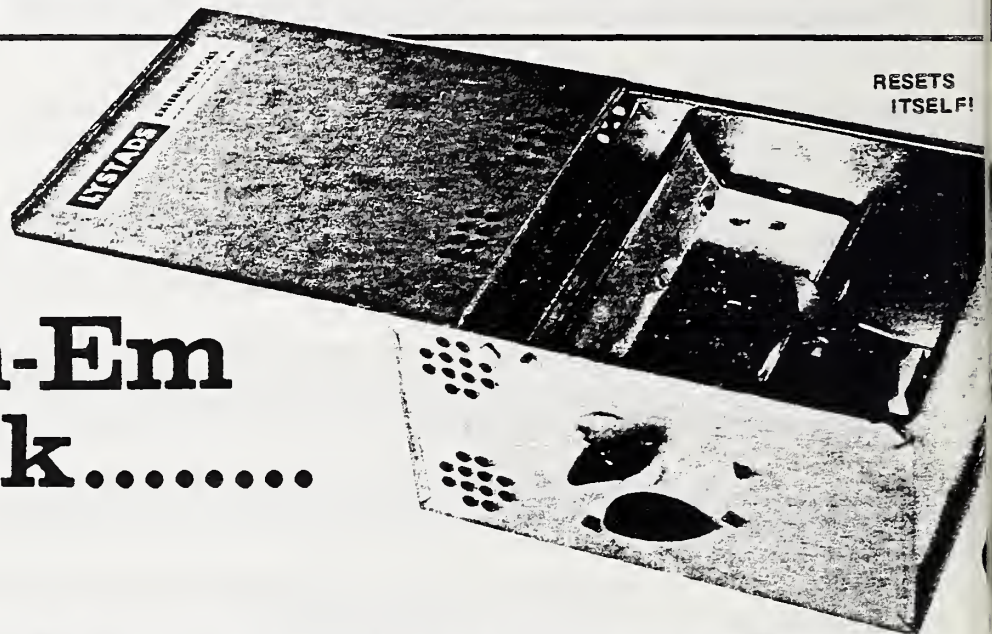
SAFER/SURER!

SOLVE "COSTLY" MICE PROBLEMS!

**METAL
TRAP!**

**Catch-Em
Kwick.....**

(INSTANT CAPTURE)



- ★ **INSPECTOR RECOMMENDED!**
- ★ **LESS CONTAMINATION!**
- ★ **EVIDENCE CONTAINED!**
- ★ **NO POISON!**
- ★ **TRAPS UP TO 15 MICE
WITH ONE SETTING!**
- ★ **ACCIDENT FREE!**
- ★ **LESS ODOR PROBLEMS!**
- ★ **NO EMBARRASSMENT!**

Courtesy of Economic Laboratories

54 **LYSTADS, INC. Pest Control Division**

Grand Forks ND 58201

Supplement I-F

NEW!

Lid can open against a wall without moving the station.

New lid allows room for rodents to sit up.

Station shyness is reduced as rodents can see their way out of the station.

Snap-lock keeps station shut tight.

Durable "living hinge" lid can be opened over 100,000 times without fracturing.

Two feeding receptacles hold more than 1 lb. of dry bait or a pint of liquid bait.

Station can be nailed down for extra security.

Thicker, sturdier construction with new injection-molded plastic.

Protecta[®]

TAMPER-PROOF BAIT STATION

New heavy-duty PROTECTA is made of injection-molded plastic to withstand the toughest baiting situations.

This new tamper-proof station features a "living hinge" lid that can be opened and closed 100,000 times without fracturing. Every PROTECTA includes the PROTECTA-LOC closure, a reusable child-resistant lock that provides an economical alternative to a padlock.

Buttons on the base of new PROTECTA allow air circulation which prevents frost or moisture build-up inside the station. The interior baffle design contains two feeding receptacles that hold over one pound of dry bait or a pint of liquid bait.

PROTECTA tamper-proof bait station comes nested six to a carton.

Rodent Baiters[®]

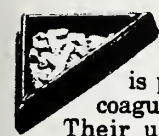
RAT and MOUSE SIZE BAIT STATIONS

RODENT BAITERS for rats and mice are rigid plastic bait stations designed to hold both liquid and dry bait. They fit flush to the wall allowing ease of entry for rodents. RODENT BAITERS have buttons on the base allowing air to pass under the station, keeping moisture condensation away from the bait.

RODENT BAITERS for rats have an automatic lock back with nylon securities for the front. They are available in USDA blue or black. They are 9" x 8" x 4 1/2" high and are nested 20 blue or 24 black to a case.

RODENT BAITERS for mice have a snap lock top and are designed for mice. Special retaining bars have been built into the base to accommodate tracking powder. They are nested 50 to a case.

Bait Trays

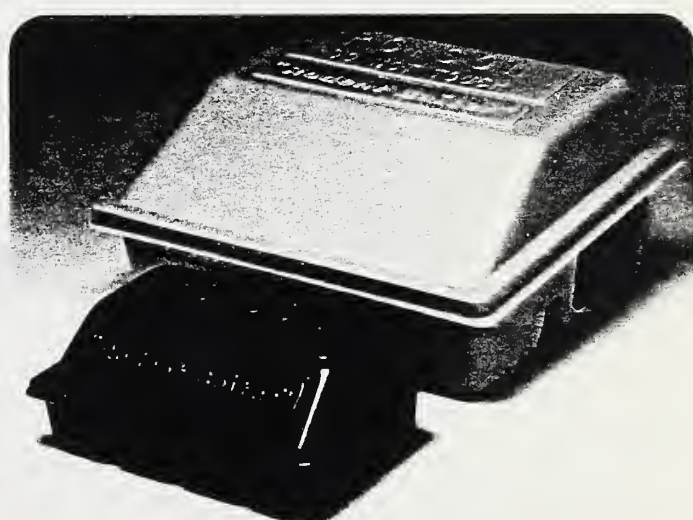


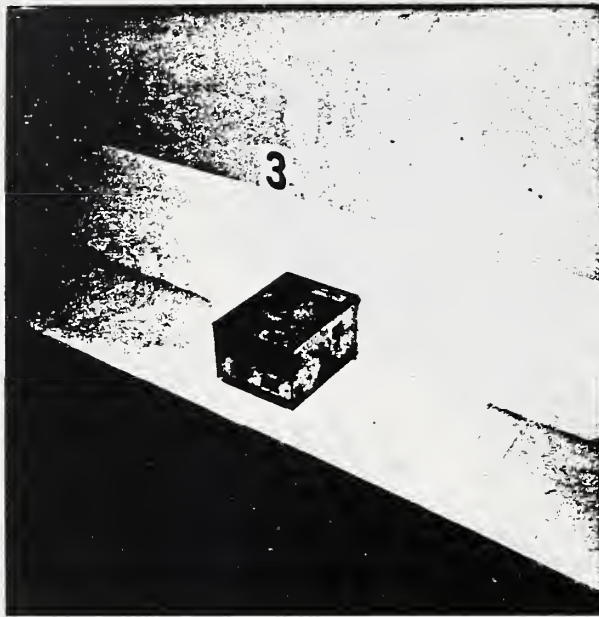
BAIT TRAYS are economical trays designed to hold either liquid or dry baits. The new 1 oz. size is perfect for the application of single-feeding anticoagulants or acute toxicants.

Their unique triangular shape allows them to fit flush against walls and in corners.

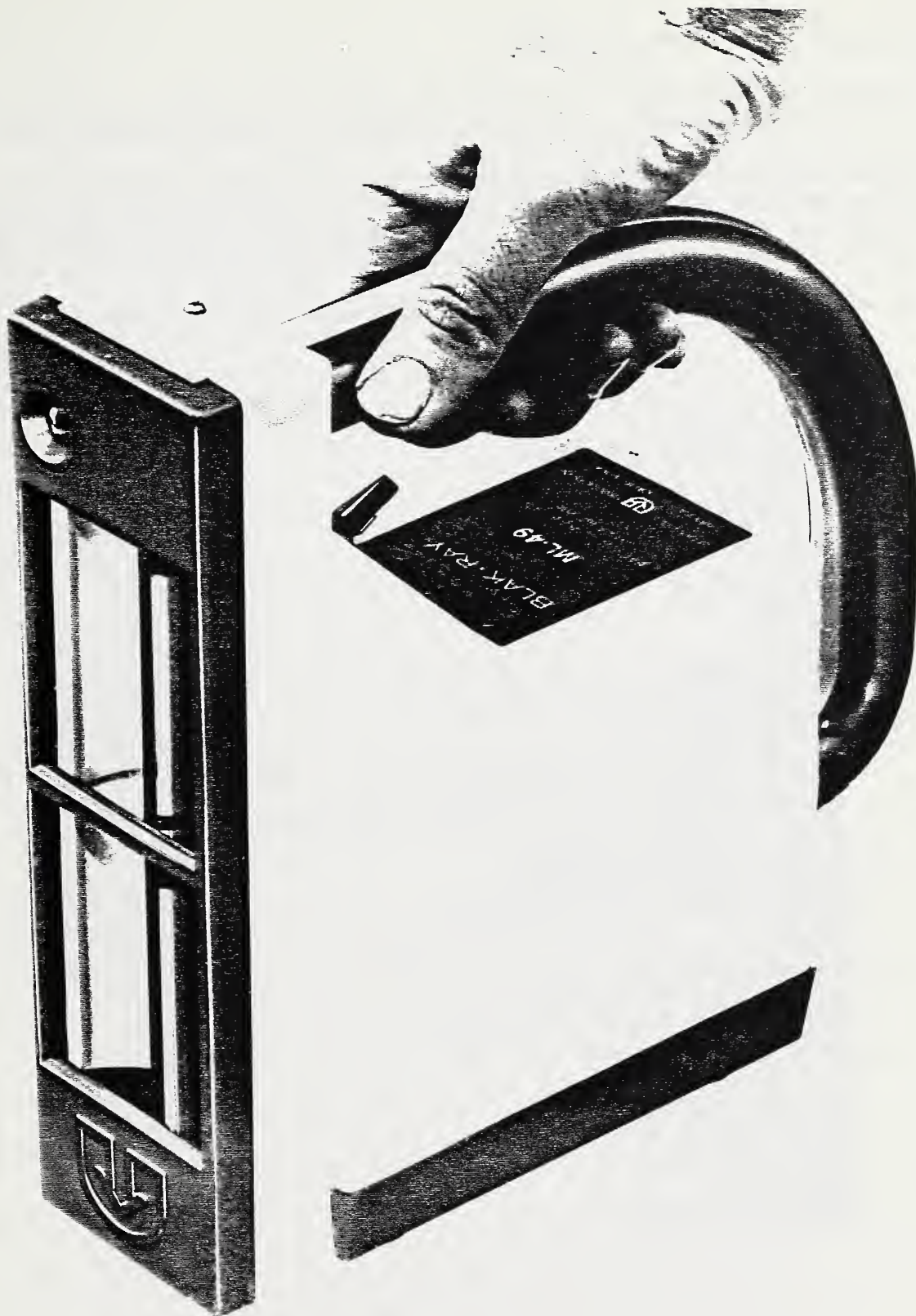
Both the 4 oz. and 1 oz. bait trays provide an economical alternative for situations where protected stations are not necessary.

The 4 oz. bait tray comes packaged in cases of 1,000, while the 1 oz. trays come nested in boxes of 1,000 with six boxes per case.





Numbered Trap Stations



Example of black (ultra violet) light for detecting rodent urine, hairs and excreta.

Courtesy of UVP Inc., San Gabriel CA 91778

APPROVED AND REGISTERED PESTICIDES*

In order for a pesticide to be assigned a registration number, it must first pass all the tests specified by the Environmental Protection Agency (EPA)

The label must only have those statements on it which have been proven to EPA to be correct. The label must also have the proper precautionary statements and the proper directions for use. In accordance to the new law, these products, therefore, can only be used in accordance to the directions written on the label.

Listed below are EPA approved pesticides with registration numbers.

	E P A REGISTRATION NO.
Baygon 2% Bait	3125-121-2A
Baygon 1.5%	3125-214-2A
Baygon 70% Wettable Powder	3125-146-AA
Blatta Bites	6720-266
Bor/Act	6720-139
Carbamate 1.5EC	655-638
Cross Fire SBP1382	432-547
Cygon 2E	7273-55-2393AA
CB 40 (Pyrethrin)	9444-41-AA
C100	876-63-AA
Dursban Lo	464-571
Dursban 4E	464-360
Dursban T.C.	464-562
Diazinon	655-457
Drione	4816-353-AA
Ficam-W	45639-1
Knox Out 2FM	4581-335
Lystads Aldrin	1927-22-2881
Lystads I, II and 30 Day (Pyrethrin)	9444-1-2A-2881
Lystads 5% Vapo Fog	36480-21-2881
Lystads S100	4816-404-2881
Lystads Cythion	2881-38
Lystads Dairy Farmers Aerosol	9444-88-2881
Lystads Entrol For Industry (Pyrethrin)	2881-50
Lystads Fly Bait	2393-343-2881
Lystads Insecticide for Institution (Pyrethrin)	9444-41-AA-2881
Lystads Pyrethrin Spray	2881-37
Lystads Pyrethrin (Pyrethrin)	2881-53
Lystads Pyrifog (Pyrethrin)	1021-1177-2881
Lystads Pyrispray (Pyrethrin)	2881-56
Lystads Roach & Ant Killer	9444-86-2881
Lystads Super Strength (Pyrethrin)	9444-21-AA-2881
Orthene	239-2493-AA
Safrotin	11273-22
Lystads Bait Station Rat & Mouse Killer	12455-1-2881
Lystads Mouse Seed	7173-144
Lystads Rat & Mouse Killer	2881-62
Lystads Rogon	2881-54
Motomco Water Soluable Diphacinone	3240-17
Rodent Cakes	12455-5-AA
Rozol Tracking Powder	7173-113
Talon-G	10182-38
Z.P. Rodent Bait	12455-18-AA
Z.P. Tracking Powder	12455-16-AA
Avitrol (Corn Chop)	11649-6
Avitrol (Whole Corn)	11649-7
Rid-A-Bird 100	7579-2
Rid-A-Bird Control	7579-1
Meth-O-Gas	5785-41-AA
Magtozin	40285-12
Phostoxin (Pellets)	40285-3
Phostoxin (Tablets)	40285-1

* Courtesy Economics Laboratories
Lystads Inc., Pest Control Division
Grand Forks, ND 58201

PART II
STORAGE TABLES

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INTRODUCTION

The Tables on storage are based on the Department of Defense Manual DOD 4145.19-R-1 dated September 15, 1979. The information contained in the DOD Manual is based on information supplied by the U.S. Department of Agriculture, the Refrigeration Research Foundation and other reliable sources. The guidelines contained in DOD 4145 have been modified to be more relative to the commercial sector in general and the school food service and institutional subsectors in particular.

The information presented herein pertains principally to warehouse storage, although many points are salient to backroom storage at food service establishments.

FROZEN FOODS

The storage guidelines shown in Table 1 are based on:

- Proper treatment of the product prior to arrival
- Proper packaging, and
- Proper (ideal) storage conditions prior to and after arrival.

TO MAINTAIN PRODUCTS AT TOP LEVELS OF QUALITY AND FOR REASONS OF ECONOMY AS WELL, FROZEN ITEMS HELD IN A TERMINAL DISTRIBUTOR WAREHOUSE SHOULD BE USED WITHIN THREE MONTHS OF RECEIPT UNLESS INDICATED OTHERWISE IN TABLE 1.

The approximate storage times shown in Table 1 for frozen products are based on the maximum times allowed before the quality of the products will degenerate significantly. It is important to remember that the frozen storage of all products is based on Time Temperature Tolerance.

It can be expected that if the acceptability of a product scores 100 after 3 months, the score might be only 90 after 6 months and so on. Under these circumstances, a product might score a 50 on the same relative scale after 18 months and still have a moderate degree of patron acceptance. It is important to remember also, that items which contain spices might age faster than plain items.

Keys to Storage Life

- Inspect temperatures on arrival.
- Make sure that the integrity of the packaging is not violated.
- Employ proper storage conditions.
- Keep a continuous record (recording) of room temperatures to make sure that the frozen temperature is not violated.

Many products, particularly meats, cheese, etc., will suffer from freezer burns (dehydration) if not properly packaged and if temperatures are violated.

If a frozen product is to be held for months in a terminal distribution warehouse, it should be inspected at least 3-month intervals to make sure that the quality is at the level expected for the storage period.

TABLE 1 - GUIDELINES FOR STORING FROZEN FOODS AT 0°F OR BELOW

	Approximate Storage Life Months
Apples	18
Apple Juice, Concentrated	30
Asparagus	12
Bacon ^{2,3}	
cooked	9
slab,	5½
sliced,	1½
sliced, vacuum packed	3
Canadian	6
Beans	
green	12
lima	14
wax	12
Beef ²	
boneless, fabricated	12
carcass, wholesale cuts	12
corned	6
cutlets, boneless (restructured)	9
dried, sliced	12
ground	9
ground patties	6
liver, whole or portion cut	4
tongue, fresh	4
tongue, cured or smoked	6
Blackberries	18
Blueberries	18
Bologna ^{2,3}	
Lebanon	8
50% beef	3-4
60% beef	3-4
75% beef	6
Boysenberries, dewberries, loganberries, youngberries	18
Bread dough	6
Bread Yeast raised (and rolls fresh)	6
Broccoli	14
Brussels Sprouts	12
Burritos	6
Butter prints and patties	18
Cakes, coffee, layer, loaf, cheese	12
Carrots	24
Cauliflower	14

TABLE 1 - GUIDELINES FOR STORING FROZEN FOODS AT 0°F OR BELOW

	Approximate Storage Life Months
Cervelat ^{2,3}	
dry	6
soft (thuringer)	3-4
Cherries, RTP and dark, sweet, pitted	24
Cheese, pizza blend, shredded	12
Chicken ²	
gizzards	6
parts, cut up, ready to cook	8
whole, ready to cook	10
Clams, shucked ²	8
Corn	24
Corn on the cob	9
Crabs	8
Cranberry juice cocktail	24
Dates	12
Ducks ²	10
Egg rolls	6
Eggs	
whole (including table grade) ²	12
whites	12
yolks, sugar or salt added ²	12
Enchiladas	6
Fish - fillets and steaks ²	
fatty (mackerel, salmon)	3
moderately fatty (halibut, perch, rockfish)	6
lean (cod, haddock, flounder)	4-5
Frankfurters - 50% pork ^{2,3}	
carton	1
flexible package	1
Grape juice, concentrated	24
Grapefruit juice, concentrated	24
Grapefruit-orange juice, concentrated	24
Grapefruit sections	12
Greens, leafy	14
Hams, boneless, cooked ²	6
Ice Cream, sherbets or ices	9
Ice cream, novelties	3
Lamb ²	
boneless, fabricated	12
carcass, wholesale cuts	12
cutlets, boneless (restructured)	9
slices, chops	9

TABLE 1 - GUIDELINES FOR STORING FROZEN FOODS AT 0°F OR BELOW

	Approximate Storage Life Months
Lard	12
Lemon juice, concentrated	18
Lemonade, concentrated	18
Lime juice, concentrated	18
Lime juice, single strength	18
Luncheon loaf ^{2,3}	3-4
Manicotti	6
Margarine, prints and patties ²	12
Meal, precooked (TV dinners, pot pies, etc.) ^{1,6}	6
Milk, pasteurized, homogenized ²	1
Milk, whole, concentrated ^{2,4}	1
Okra	18
Onion rings, french fried and raw	14
Orange juice, concentrate	24
Oysters ²	8
Pastrami	6
Peaches	18
Peas	
black eye	12
green	14
Peas and carrots	14
Pepperoni	6
Peppers	14
Pies, fruit, baked and unbaked ²	
cream filled	6
fruit filled	12
Pineapple	12
Pineapple juice, concentrated	24
Pizza	6
Pizza shells	6
Pork	
barbecued	6
cutlets, boneless (restructured)	8
hocks, feet	6
hocks, smoked	3
loin, boneless, fabricated	8
slices, chops	8
wholesale cuts	8
Potatoes	
white, french fries, precooked rounds	12
white, hash brown	12
Raspberries	18
Rhubarb	24
Ravioli	6

TABLE 1 - GUIDELINES FOR STORING FROZEN FOODS AT 0°F OR BELOW

	Approximate Storage Life Months
Salami ^{2,3}	
cooked	3-4
dry	5
Sausage ^{2,3}	
beef	6
liver	3-4
New England style	4
pork, bulk style	3
pork links	
carton	1
can	9
pork, precooked, Polish, Italian	3-4
pork and beef, precooked	6
Scallops ²	8
Scrapple	6
Shrimp ²	
raw, peeled/unpeeled	8
raw, breaded, molded	8
Soups ⁵	12
Spinach	14
Spinach, chopped	10
Squash, summer and fall, cooked	24
Strawberries	15
Succotash	12
Sweet goods, yeast raised ²	2
Tamales	6
Topping, dessert	24
Tortillas, corn or wheat	18
Turkey ²	
boneless, cooked	7
boneless, raw	7
whole, ready-to-cook	9
gizzards	6
Veal ²	
cutlets, boneless, breaded (restructured)	9
diced, cutlets, breaded	9
boneless, fabricated	12
carcass, wholesale cuts	12
semi-boneless	12
Vegetables, mixed	12
Waffles ²	6

Footnotes

1. Any evidence that a precooked meal has been thawed is reason for discarding.
2. Many of the products listed herein are also storable under chill conditions (about 32°F).
3. These products suffer deteriorative changes as a result of freezing. If frozen storage is necessary, storage times indicated will tend to minimize rancidity development.
4. Storage life below 0°F is four months.
5. Cream style soups which have broken down during freezing will be satisfactory when heated.
6. These meals may be used for their intended purpose up to nine months after date of pack provided surveillance inspections performed at least every 30 days subsequent to the six months period result in the product being accepted for consumption.

CHILLED PRODUCTS

The storage guidelines shown in Table 2 are based on:

- Receiving the product in top condition shortly after harvesting or processing
- Proper treatment of the product prior to arrival
- Proper packaging
- Proper (ideal) storage and humidity conditions prior to and after arrival

Since most chilled products are considered as "fresh", it is important for the storers to be aware that the quality acceptability of a product is at its peak when harvested, cut or otherwise prepared, and from this point on, quality slowly deteriorates. The rate of deterioration occurs more swiftly in some products than in others. The flavor of some items such as sausage, for example, which contains a mixture of spices, may become stronger with age. Accordingly, the storage life for many products listed in Table 2, may represent the lowest level of optimum acceptability.

An experienced food service operator will know the optimum storage life of each product he (she) serves. Others may have to examine products on a daily or occasional basis to check on product conditions. Often a product may degenerate in condition almost overnight. It is, therefore, important to schedule a product for use before it reaches its point of rapid degeneration.

Temperature

Chill storage is generally within a temperature range of 32° - 35°F. For some food items, better quality is maintained at temperatures higher or lower than these and are shown as accepted storage temperatures. Some items are damaged by slow freezing; for these, the average freezing points are given.

Humidity

Preferred relative humidities shown in the table are those which best inhibit the gain or loss of moisture in the item. Storage at higher relative humidities may allow water to condense on or be absorbed in the item, while at lower relative humidities, the item may dry and shrink.

Storage Compatibility of Fresh Fruits & Vegetables

Although it may be necessary to store various fresh fruits and vegetables together, there are some products which should be separated whenever possible. Apples, pears, bananas, peaches, plums, cantaloupes, ripe honey dew melons, avocados, tomatoes and other ethylene producing fruits or vegetables should not be stored with lettuce (causes russetting), carrots (become bitter), cucumbers, green peppers, acorn

or Hubbard squash (loss of green color). Odors from apples and citrus fruits are readily absorbed by meat, eggs and dairy products. Pears and apples acquire an unpleasant earthy taste and odor when stored with potatoes. Other combinations which should be avoided in storage rooms are apples or pears with celery, cabbage or onion, celery with onions or carrots, green pepper with pineapples and citrus fruit with any of the strongly scented vegetables. Green peppers can taint pineapples if the two are stored or shipped together. Onions, nuts, citrus fruit and potatoes should each be stored separately whenever possible.

Perishable Foods Compatibility Groups

For storage purposes, fresh fruits and vegetables may be divided into the following compatible groups as follows:

Group 1

Temperature: 32° to 34° F (1° to 1° C).
Relative humidity: 90 to 95 percent.
Atmosphere: Normally used on berries and cherries only—10 to 20 percent CO₂.
Ice: Never in contact with commodity.

Note. Most members of this group not compatible with Group 6a or 6b because ethylene production by Group 1 can be high, and thus harmful to members of Group 6a or 6b.

Apples (except those varieties listed in Group 3.)
Apricots
Berries (except cranberries)
Cherries
Figs (not with apples, danger of odor transfer to figs; also see Group 6a)
Grapes (not fumigated with sulfur dioxide (SO₂) in vehicle and no chemicals that release SO₂ should be included in packages.
Peaches
Pears
Persimmons
Plums and prunes
Pomegranates
Quinces

Group 2

Temperature: 55° to 65° F (13° to 18° C).
Relative humidity: 85 to 95 percent.
Ice: Never in contact with commodity.
Avocados
Bananas
Eggplant (also see Group 5)
Grapefruit¹
Guava
Limes

Mangos
Muskmelons, other than cantaloupes
Casaba
Crenshaw
Honey Dew
Persian
Olive, fresh
Papayas
Pineapples (not with avocados, danger of avocado odor absorption)
Tomatoes, green
Tomatoes, pink (also see Group 4)
Watermelons (also see Groups 4 and 5)

Group 3

Temperature: 36° to 41° F (2° to 5° C).
Relative humidity: 90 to 95 percent; cantaloupes about 95 percent.
Ice: In contact only with cantaloupes.
Apples (Grimes Golden and Jonathan (both, certain areas), Yellow Newton (California) and McIntosh.)
Cantaloupes
Cranberries
Lemons¹ (use 50 to 55° F for more than a month)
Lychees (also see Group 4)
Oranges¹ (Florida or Texas)
Tangerines

Group 4

Temperature: 40° to 45° F (4° to 7° C); beans 38° to 42° F (3° to 6° C).

Relative humidity: About 95 percent.

Ice: Never in contact with commodity.

Beans, snap

Lychees (also see Group 3)

Okra

Oranges¹ (California or Arizona)

Peppers, green (not with beans)

Peppers, red (if with green peppers, temperature adjusted toward top of range)

Squash, summer

Tomatoes, pink (also see Group 2)

Watermelons (also see Groups 2 and 5)

Group 5

Temperature: 50° to 55° F (10° to 13° C); ginger not below 55 F.

Relative humidity: 85 to 90 percent.

Ice: Never in contact with commodity.

Cucumbers

Eggplant (also see Group 2)

Ginger (not with eggplant, also see Group 7)

Potatoes (late crop)

Pumpkin and Squashes, winter

Watermelon (temperature adjusted for other members of group; also see Groups 2 and 4).

Group 6a

This group, except for figs, grapes and mushrooms, is compatible with Group 6b.

Temperature: 32° to 34° F (0° to 1° C).

Relative humidity: 95 to 100 percent.

Ice: Never in contact with asparagus, figs, grapes, and mushrooms.

Artichokes

Asparagus

Beets, red

Carrots

Endive and escarole

Figs (also see Group 1)

Grapes (not fumigated with sulfur dioxide (SO₂) in vehicle and no chemicals that release SO₂ should be included in packages.

Greens

Leek (not with figs or grapes)

Lettuce

Mushrooms

Parsley

Parsnips

Peas

Rhubarb

Salsify

Spinach

Sweet Corn

Watercress

Group 6b

This group is compatible with Group 6a, except for figs, grapes, and mushrooms.

Temperature: 32° to 34° F (0° to 1° C).

Relative humidity: 95 to 100 percent.

Ice: Contact acceptable for all.

Broccoli

Brussels sprouts

Cabbage

Cauliflower

Celeriac

Celery

Horseradish

Kohlrabi

Onions, green (not with rhubarb, figs, or grapes; probably not with mushrooms or sweet corn).

Radishes

Rutabagas

Turnips

Group 7

Temperature: 55° to 65° F (13° to 18° C).

Relative humidity: 85 to 90 percent.

Ice: Never in contact with commodity.

Ginger (also see Group 5)

Potatoes, early crop (temperatures adjusted for others)

Sweetpotatoes

Group 8

Temperature: 32° to 34° F (0° to 1° C).

Relative humidity: 65 to 70 percent.

Ice: Never in contact with commodity.

Garlic

Onions, dry

¹ Citrus fruits—Biphenyl fungicide may impart off odors to other commodities.

The above information was extracted from Lipton, W. J. and J. M. Harvey, Compatibility of Fruits and Vegetables During Transport in Mixed Loads, US Department of Agriculture, Agricultural Research Service, ARS 51-48 (September, 1972).

TABLE 2 - GUIDELINES FOR STORING CHILLED FOODS

Items	Average Freezing Point	Accepted Storage Temperature	Preferred Relative Humidity %	Approximate Storage Life (Days)
Artichokes, Globe	30	32	95	14
Artichokes, Jerusalem	28	32	90-100	150
Apples	29	32	90	120-240
Red delicious, Washington	30	32	90	120-240
Apricots	30	32	90	7-21
Asparagus, fresh ¹¹	31	32	95	10
to prevent chill damage extended storage	—	36	95	14-21
Avocados				
rough skinned	31	40-45	85-90	14-28
smooth skinned	31	55	85-90	14
Bananas				
green	31	56-58	90-95	7-10
ripe	—	56-58	85	2-4
Beans				
green or wax	31	45-50	95	7-10
lima, unshelled, shelled	31	32	95	7
Beef				
carcass and wholesale cuts	—	32-35	85-90	10-14
corned	—	32-35	85-90	9-11
ground	—	32-35	85-90	4
tongue, fresh	—	32-35	85-90	35-42
tongue, smoked	—	32-35	85-90	35-42
Beets, bunch	31	32	95	10-14
Beets, topped ⁶	30	32	95-100	120-180
Berries, black, rasp, logan, young, boysen, dew	31	32	95	2-3
Berries, straw	31	32	90-95	5-7
Blueberries	30	32-35	90-95	14
Bologna				
Lebanon	—	32-35	85-90	60
50%beef	—	32-35	85-90	12
Broccoli	31	32	95	10-14
Brussels Sprouts	31	32	95	21-35
Butter, prints and patties	—	32-35	under 55	30
Cabbage				
red	31.7	32	95-100	21-42
summer types	31	32	95-100	21-42
winter types	31	32	95-100	90-120
Chinese, shredded	31	32-35	—	7-10
Cantaloupe				
hard ripe ³	30	36	90-95	15
fullslip	30	32-35	90-95	5-14

TABLE 2 - GUIDELINES FOR STORING CHILLED FOODS

Items	Average Freezing Point	Accepted Storage Temperature	Preferred Relative Humidity %	Approximate Storage Life (Days)
Carrots ^{6, 12}				
table ready, sliced	30	32-35	—	10-14
mature, topped	30	32	98-100	150-270
immature, topped	31	32	98-100	28-42
bunch	20	32	95-98	10-14
Casaba melon	30	40-45	90	28-42
Catsup				
boat, envelopes ⁹	—	50	80-90	180
cup, foil pouch ⁹	—	50	—	365
Cauliflower ⁶	31	32	95	14-28
Celeriac	30	32	95-100	90-120
Celery				
northern grown ⁶	31	32	95	30-60
California or Florida ¹³	31	32	95	35-42
Cervelat ⁵				
dry	—	32-35	75-80	45
soft (thuringer)	—	32-35	85-90	14
Cherries, sweet ¹⁰	29	30-31	90-95	14-21
Chicory	30	32-34	85-95	10-20
Chives, potted	30	35-45	90-98	14
Cheese				
blue veined, natural	—	32-35	70-75	180
cheddar, natural	25	30-34	65-70	540
cottage	30	32-35	—	14
cream	—	32-35	70-75	120
mozzarella, natural	—	35	70-75	30
process American, piemento or				
Swiss loaf	25	32-35	65-70	540
sliced	—	32-35	65-70	360
parmesan	—	32-35	70-75	360
pizza blend	—	35	70-75	180
provolone, natural	—	35	70-75	360
Romano, natural	—	32-35	70-75	360
Swiss, natural	25	32-35	70-75	360
Chocolate drink	29	32-35	—	7
Clams, shucked	—	32-35	—	4
Cookie dough	—	32	—	90
Corn on the cob, top-iced	31	32	95	4-8
Cranberry				
fresh	30	36-40	90-95	60-120
sauce, cup ⁹	—	50	—	180
Cream				
half & half, including filled	31	32-35	—	7
sour, cultured	31	32-35	—	14
table, including filled	31	32-35	—	10
whipping	31	32-35	—	10

TABLE 2 - GUIDELINES FOR STORING CHILLED FOODS

Items	Average Freezing Point	Accepted Storage Temperature	Preferred Relative Humidity %	Approximate Storage Life (Days)
Crenshaw melon	30	45-50	90-95	14
Cucumbers	31	50-55	90-95	10-14
Currants	30	31-32	90-95	10-14
Dates, pitted, cured	1	32	70-75	180
Eggnog	28	32-35	—	14
Eggs, shelled				
fresh	27	29-31	80-85	150-180
oil processed	27	29-31	70-80	150-180
Eggplant ³	31	45-50	90-95	7-10
Elderberry	30	31-32	90-95	60-120
Fennel	30	32	90-98	60-120
Figs, fresh	27	32	85-90	7-10
Frankfurters, 50% beef, 50% pork				
carton	—	32-35	85-90	10
flexible package	—	32-35	85-90	21
French dressing, cup, boat or				
envelope	31	50	80-90	80-90
Fruitcake, fresh	—	40	50-60	300
Fruits, dried	22-25	32-40	50-60	180-360
Garlic, dry	30	32	65-70	180-210
Ginger, rhizomes	—	55	65	180
Gooseberries	30	31-32		90-95
14-28				
Grapefruit ^{8,9}	30	50-60	85-90	29-42
sections	—	35-45	—	540
Grapes				
American types	30	32	85	21-56
European types	28	30	90-95	60-180
Greens				
endive, escarole ⁶	31.9	32	95	14-21
collards, kale, rape, beet,				
mustard, turnip, chicory	31	32	95	10-14
Ham				
cured, canned	—	32-35	60-65	270
boneless, cooked	—	32-35	85-90	28
smoked ⁵	—	32-35	85-90	28
Honeyball, melon	31	40-50	90-95	21-28
Honeydew, melon	30	45-50	90-95	21-28
Horseradish, prepared	30	32	—	90
Horseradish root	29	32-32	95-100	300-360
Huckleberries	29	32	80-85	7-10

TABLE 2 - GUIDELINES FOR STORING CHILLED FOODS

Items	Average Freezing Point	Accepted Storage Temperature	Preferred Relative Humidity %	Approximate Storage Life (Days)
Jams, jellies, preserves				
boat, envelope ⁹	—	50	80-90	180
cup, foil pouch ⁹	—	50	—	365
Kohlrabi	30	32	95	14-28
Kumquats	29	33-35	85-90	60-120
Lamb, carcass, wholesale cuts	—	32-35	85	7-10
Lard, service style	—	45	90-95	120-240
Leeks	31	32	95	30-90
Lettuce				
iceberg	32	32-34	95-100	
leaf, romaine	32	32-34	95-100	5-8
table ready, whole or chopped	32	32-34	—	5-7
Lemons	30	55	85-90	30-90
Limes	29	48-50	85-90	42-56
Luncheon loaf	—	32-35	85-90	14
Mangoes	30	55	85-90	14-21
Margarine, prints and patties ¹	—	32-35	40-70	60-90
Milk				
buttermilk	31	32-35	—	14
chocolate flavored	29	32-35	—	7
fluid, pasteurized	30	32-35	—	7
ice mix, fresh, liquid	31	32-35	—	10
shake mix, fresh, liquid	31	32-35	—	10
Mushrooms	30	32-34	90	3-4
Mustard				
boat, envelope ⁹	30	50	80-90	90
cup, foil pouch ⁹	30	50	—	270
Nectarines	30	31-32	90	14-28
Okra	29	45-50	90-95	7-10
Olives	29	45-50	85-90	28-42
Onions ⁷				
Bermuda, dry	31	32	65-70	30-60
globe, dry	30	32	65-70	180-240
green	30.4	32	95	21-28
Spanish	31	32	65-70	90-180
peeled or green, table ready	31	32-35	65-70	5-7
Oranges				
California, Arizona	30	40-44	85-90	28-42
Florida, Texas	30	32	85-90	56-84
Temple, Tangelos	30	38-40	90-95	14-28
sections	—	35-45	—	540

TABLE 2 - GUIDELINES FOR STORING CHILLED FOODS

Items	Average Freezing Point	Accepted Storage Temperature	Preferred Relative Humidity %	Approximate Storage Life (Days)
Orange juice	30	32	—	21
Papaya	30	55-60	85-90	7-21
Parsley	30	32	95	30-60
Parsnips	30	32	98-100	60-180
Peaches	30	31-32	90	14-28
Peanut butter				
boat, envelope	—	50	80-90	180
cup, foil pouch	—	50	80-90	365
Pears ¹	29	29-31	90-95	120-240
Peas, unshelled	31	32	95	7-14
Peppers, sweet	31	45-50	90-95	14-21
Peppers, dry, chili	—	32-50	60-70	180
Pepperoni, dry	—	32-35	75-80	28
Persian melons	31	45-50	90-95	14
Persimmons	28	30	90	90-120
Pies				
fruit, fresh	—	35	80-85	3
fried, fresh	—	35	80-90	5
Pineapple				
mature, green ³	30	50-55	85-90	21-28
ripe	30	45	85-90	14
Plums	30	32	90-95	21-28
Pomegranates	27	32	90	14-28
Pork, wholesale cuts	—	32-35	85-90	5
Poultry, all forms	27	30	95-100	5
Potatoes				
sweet	30	55-60	85-90	120-210
white	31	40-50	90	120-150
peeled, table ready	31	35	95	5-9
Prunes, Italian	30	32	90-95	14-21
Pumpkins	31	50-55	70-75	60-90
Quinces	28	31-32	90	60-90
Radishes				
spring, topped	31	32	95	21-28
winter, topped	31	32	95-100	60-120
Rhubarb	31	32	95	14-28
Rolls, brown and serve	—	32	80-85	21
Rutabagas, topped	30	32	98-100	120-180
Salad dressing, cup, boat				
envelope ⁹	31	50	80-90	90
Salmon steaks	—	32-35	85-90	28

TABLE 2 - GUIDELINES FOR STORING CHILLED FOODS

Items	Average Freezing Point	Accepted Storage Temperature	Preferred Relative Humidity %	Approximate Storage Life (Days)
Salami ⁵				
dry	—	32-35	75-80	60
cooked	—	32-35	85-90	14
Salsify	30	32	98-100	60-120
Sausage				
liver	—	32-35	85-90	14
New England style	—	85-90	10	
pork links	—	32-35	85-90	14
pork bulk	—	32-35	85-90	14
Scallops	—	32-35	—	4
Shallots	31.7	32	95	21-28
Shortening compound, can				
carton, cube	—	32-35	under 55	1800
Syrup, imitation maple,				
cup,boat, envelope ⁹	—	50	80-90	365
Spinach	31.5	32	95	10-14
Squash				
Hubbard	30	50-55	70-75	180
acorn	30.5	50	70-75	35-56
summer	31	32-40	90	4-5
Swiss chard	31	32	95	10-14
Tangerines	30	32	85-90	14-28
Tomatoes				
mature, green ³	31	55-70	85-90	7-21
pink	31	50-55	85-90	3-5
firm, ripe	31	45-50	85-90	4-7
full color development	31	32-35	85-98	21
Turnips	30	32	95	120-150
Watercress	31	32-35	90-95	7
Watermelon	31	40-50	85-90	14-21
Yeast, bakers				
active, dry	—	30-39	60-70	180-360
compressed cake	—	30-32	80-90	30-90
Yogurt, plain or fruit flavored	30	30-35	—	30

Footnotes

1. Soybean oil margarine is considered by some authorities to be less stable than cottonseed oil margarine.
2. The length of time apples can be held successfully in cold storage at 32°F, unless otherwise specified, will vary with the variety, the district where grown, as well as with their condition when harvested. Controlled atmosphere can extend storage life an additional two to four months.
3. Damage will result if item is stored at lower temperature than indicated.
4. For best ripening, pears should be held at about 65°F for two to three days prior to serving.
5. Very susceptible to mold growth on surface. Inspect and wipe often.
6. This item keeps better unwashed.
7. This commodity should not be stored with items such as apples and grapefruit since they will acquire an onion taste. Compartments should be kept dark.
8. The refrigerated storage of Florida grapefruit is not recommended for more than a limited period and then only if the fruit is inspected at intervals. Grapefruit is very susceptible to rind pitting and aging at comparatively low temperatures, especially at 38° F (as compared with 43°F). At higher temperatures, such as 50°F the rapid development of decay is troublesome.
9. Keeping time in uncontrolled storage (dry space) is less than three months because of desiccation and because of swelling due to microbial activity.
10. Sweet cherries packed in sealed polyethylene bag liners can be stored for up to 21 days.
11. Asparagus held too long at 32°F is subject to chill injury. The butts of asparagus should be placed in absorbent material during storage.
12. Carrots may become bitter if stored with fruits which give off ethylene, such as apples and pears. If carrots are bitter, they should be stored at room temperature for several days before use.
13. Polyethylene liners will extend storage life an additional 7-14 days.

CANNED PRODUCTS

Items in this group consist of food products that are canned or otherwise processed to the extent that such items may, under normal conditions, be stored in nonrefrigerated spaces. While these products (canned) are not nearly as susceptible to spoilage as frozen and chilled items, spoilage can and will occur if the products are mishandled, improperly stored, or stored for excessive periods of time. It is important to remember that the length of storage should be based on the date of packing and not the date of receipt.

Careful, correct storage methods not only prevent damage to items in storage, but assure speed and efficiency in the receipt, handling and distribution of such items. Shipments should be segregated and clearly marked so that the oldest lots, as packed and not received, are distributed first, unless the newer lots show evidence of deterioration or spoilage.

The particular method used for storing each item depends on the nature of the container, the nature of the commodity, and the bursting or breaking strength of the bottom layers. For example, items packed in glass containers with cork stoppers should be inverted to prevent the drying out of the stoppers and subsequent leakage. It is also important to recognize that products containing spices may get stronger with age.

Storage Precautions

Care should be taken that items are not stacked so high as to cause a bursting or crushing of the bottom layers; nor should items be stacked so high that the top layer is subject to the higher temperature more prevalent near the ceiling. Stacking in close proximity to steam or other heated pipes must be avoided.

Pallets or dunnage must be used to raise products off the floor and individual lots piled in such a way as to permit the circulation of air around the lots. Items should not be stored in large masses in corners of the storeroom or directly against walls; such storage leaves insufficient room for cleaning and inspecting. Palletized storage facilitates handling of the products and reduces losses by breakage in handling. All items should be properly cross-stacked (interlocked) to keep the stack solid and prevent it from toppling.

Storage Periods

The safe storage period for canned food items varies greatly, depending on such elements as temperature, humidity, care in handling, protection from the weather, quality of the food when received and the method of packing. Safe storage periods become very uncertain at extremes of temperature.

An item which has been on hand beyond the safe storage period should be inspected carefully for spillage, leakage, or other damage and if still good, used as soon as possible and such items should be given priority of usage over newer stocks.

Age. All foodstuffs are subject to varying degrees of natural deterioration which is inherent in the food itself. It should not, however, be confused with the action of micro-organisms, chemical agents, or other outside agents. Such facts compel an observance of the basic principle of storage that the oldest lots of an item always should be used first, except under conditions indicated at the beginning.

Freezing. If foods containing relatively large amounts of water are frozen, physical appearance and quality may suffer due to changes in consistency and texture (softening). Emulsions such as canned cheese and butter, prepared mustard, and mayonnaise may be broken (separated) by freezing. Freezing causes loss in palatability of some products and may cause powdering of the protective lacquer of cans and loss of its adhering power.

Ventilation. Where sharply fluctuating temperature and high humidity prevail, the lack of proper ventilation may cause excessively high temperatures. Proper ventilation is one of the most important factors in protecting foods, particularly in warm climates. In extreme cases, it may be necessary to open doors and use fans to induce circulation.

Light. Damage from light is restricted to products that are packed in glass or transparent containers. Exposure causes color changes and may affect the flavor of foods containing, or composed of, edible oils and fats.

Spoilage Factors

Rust. Rust, unless it actually penetrates the can causing leakage, will not injure the contents or render them inedible.

Dents. Dents, unless so severe as to cause leakage, do not indicate that the contents are in any unsatisfactory condition.

High Temperature. High temperatures are detrimental to all canned provisions and reduce the storage life to a considerable degree.

Quality Change. Fading of color, loss of flavor, or softening of contents are due to chemical action and natural aging process.

Discoloration. Discoloration of contents on the inside of cans may be caused by chemical action. Discoloration is found usually in products containing sulphur compounds, i.e., corn, peas, and meat products.

Swells. Swells, springers and flippers are caused either by chemical or bacterial action, or by overfilling. Regardless of the primary cause, cans exhibiting such defects should be discarded or referred to USDA or state inspection officers for recommendation for disposition.

Pinholing. Pinholing is due to chemical action of the food acids on the tin. Pinholing is more often found in enamel lined cans, brine-packed or vinegar-packed items, and in water-packed fruit.

Flat Sours. Flat sours are caused by bacterial action, causing changes in odor, color, or turbidity of the product, but not accompanied by gas production which would cause swelling of the can.

Explanations for Table 3

As a rule of thumb, storers should plan to turn their inventory of canned stock every three months. Table 3 indicates the maximum storage periods for acceptable quality retention.

THE IMPORTANT POINT TO REMEMBER IS THAT STORAGE PERIODS ARE DRAMATICALLY AFFECTED BY TEMPERATURE AS SEEN FROM THE TABLE.

Warehouses must be heated during cold weather to a temperature of 40°-50°F (50°F is preferred by workers). In hot weather, warehouses must be ventilated by heavy duty fans located in the roof or rear end of the building. Fans should be equipped with insect screens. The best procedure is to use the fans to bring air into the building through the insect screens and exhaust the air through shipping doors or louvered vents (with insect screens).

A normal maximum temperature of 80°F may be maintained in a well insulated building, even in warm climates, if the ventilation is maintained over a 24 hour period. (The building will cool off during the night and retain the coolness well into the day).

It is recognized that warehouse temperatures in warm climates may go well above the 70°F shown in Table 3. This simply means that the storage life of products will be curtailed accordingly. It is therefore imperative in warm climates to accelerate inventory turns.

Over-aged Stock. Any product which is received or stored for periods longer than those shown on the storage life table does not necessarily mean that the product is unfit or undesirable. Items stored for periods in excess of the storage life shown in the table, but at temperatures lower than those listed therein, should not be automatically considered as over-age stock.

Containers. Since the container is one of the factors in the overall keeping period of an item, the container should be considered if it markedly differs, that is, coffee in bags vs. coffee in vacuum-packed tins. Thus, warehouse personnel should be guided by the appearance, odor, color and condition of the item. The desirable properties of flavor, odor and taste often depend upon very unstable or volatile components, and deterioration may result from a breakdown or loss of these constituents. However, excessive heat and inadequate packaging can be major factors contributing to deterioration.

TABLE 3 - GUIDELINES FOR STORING CANNED FOODS

Item	Packaging	Keeping time in Months	
		40°F	70°F
Almond Paste	Can	36	9
Apples:			
regular pack	Can	48	24
butter	Can/Jar	36	18
sauce, dietetic pack	Can	48	24
juice, single strength	Can	36	18
rings, spiced	Can	36	18
Apricots:			
regular pack	Can	48	24
dietetic pack	Can	36	18
Apricot Nectar, regular	can	48	24
Asparagus	Can	36	18
Bacon			
sliced	Can	48	24
cooked	Can/Flex Pack	48	24
Bakery Mixes, extended shelf			
life, except biscuit, cheese cake,			
cookie, corn bread, or pie crust			
mix, see specific item	Can	72	36
Baking Powder	Can	24	12
Beans			
green	Can (plain)	36	18
.	Can (enamel)	48	24
kidney	Can	72	36
lima	Can	72	36
pinto	Can	72	36
sprouts	Can	48	24
wax	Can (plain)	36	18
.	Can (enamel)	48	24
white, with pork,			
in sweet sauce	Can	72	36
in tomato sauce	Can	48	24
refried	Can	72	36
Beef			
chunks w/natural juices	Can	60	36
corned	Can	60	36
with gravy	Can	72	36
with spiced sauce	Can	60	24
Beets	Can	36	18
Berries, black, etc.	Can	36	18
beverage base			
cocoa, powder	Can	72	36
imitation, liquid	Bottle	24	12

TABLE 3 - GUIDELINES FOR STORING CANNED FOODS

Item	Packaging	Keeping time in Months	
		40°F	70°F
Beverage base, liquid for			
post mix			
colapi, pepper	Can	2	12
fruit punch, lemon-lime,			
orange, root beer, ginger			
ale, grape	Can	18	8
Biscuit mix	Can	36	18
Blueberries	Can	36	18
Bouillon dried, cubes,			
beef or chicken	Can	48	24
Cabbage, red, sweet/sour . . .	Can	48	24
Candy			
coated (bridge mix)	Can	72	36
hard	Can	72	36
Carrots	Can	60	30
Catsup			
regular	Bottle	48	24
regular	Can	36	18
Cherries			
dietetic pack	Can	36	18
maraschino	Jar	36	18
RTP (red, tart, pitted) . . .	Can	36	18
sweet, dark	Can	36	18
sweet, light	Can	36	18
Chicken	Can	60	36
Chili con carne w/o beans . . .	Can	48	30
Chili sauce	Bottle	48	24
Chives, dried	Can	24	12
Chocolate syrup, beverage . . .	Can	72	36
Chutney sauce	Jar	48	24
Clams	Can	72	36
Cocoa, Natural	Can	72	36
Coconut, sweetened	Can	36	18
Coffee	Can	18	12
Cookie mix, chocolate & sugar .	Can	36	18
Corn bread mix	Can	24	12
Corn, cream & whole grain style	Can	72	36
Corn meal	Can	48	24
Crabapples, spiced	Can	36	18
Crab	Can	72	36
Cranberry sauce	Can	36	18
Cranberry juice cocktail	Can	30	12
Cream			
substitute	Can	48	24
whipping, dry	Can	8	6

TABLE 3 - GUIDELINES FOR STORING CANNED FOODS

Item	Packaging	Keeping time in Months	
		40°F	70°F
Dessert powder			
gelatin base, all flavors ⁴ . . .	Can	72	36
starch base, all flavors ⁴ . . .	Can	48	24
instant, all flavors ⁴	Can	48	24
Egg mix, dried	Can	60	36
Eggs, whole, dry	Can	72	36
Enchiladas	Can	48	24
Figs	Can	48	24
Flavoring			
imitation maple or vanilla . .	Bottle	indef	indef
non-alcoholic	Bottle	24	18
tablet, im. maple or vanilla .	Bottle	indef	indef
Food coloring			
liquid	Bottle	indef	indef
paste	Jar	48	24
Frankfurters	Can	60	35
Fruit, candied	Jar	12	6
Fruit cocktail	Can	48	24
Fruit mix, freeze dried	Can	24	12
Fruit puree	Can	48	24
Grape juice, single strength . .	Can	24	12
Grapefruit	Can	48	24
juice, single strength	Can	48	24
Grapefruit-orange juice			
blend, single strength	Can	48	24
Grapefruit-pineapple juice			
blend, single strength	Can	48	24
Ham chunks	Can	60	36
Hamburgers, without gravy . . .	Can	60	36
Hash, corned or roast beef . . .	Can	72	37
Hominy, whole	Can	72	36
Honey	Jar	48	24
Ice cream, Ice milk			
mix, powder	Can	36	18
Icing mix	Can	72	36
Jam, fruit	Can/jar	36	18
Jelly, fruit	Can/jar	36	18
Lime juice, single strength . . .	Can	24	12
Luncheon meat	Can	60	36

TABLE 3 - GUIDELINES FOR STORING CANNED FOODS

Item	Packaging	Keeping time in Months	
		40°F	70°F
Malted cereal syrup	Can	48	24
Margarine	Can	36	18
Marmalade	Jar	36	18
Mayonnaise	Can/jar	12	6
Meat spread	Can	36	18
Meringue powder	Can	48	24
Milk			
dry, non-fat	Can	36	18
evaporated ²	Can	24	12
filled dry, inc. chocolate . .	Can	24	12
ice & milk shake mix, dry . .	Can	24	12
malted, dry	Can	48	24
whole, dry	Can	6	3
Mincemeat	Can	48	24
Molasses	Can	48	24
Mustard, prepared	Can/jar	36	18
Mushrooms	Can	48	24
Noodles, chow mein	Can	8	4
Nuts			
shelled, roasted	Can	60	24
Okra	Can	48	24
Olives			
green	Jar	48	24
ripe	Can	48	24
Olive oil	Can	18	6
Onions, whole, acified	Can	36	18
Orange juice, single strength . .	Can	48	24
Peaches			
dietetic pack	Can	48	24
regular pack	Can	48	24
Peanut butter	Can/jar	36	18
Pears			
dietetic pack	Can	36	18
regular pack	Can	36	18
Peas			
blackeye	Can	72	36
green	Can	72	36
Peas and carrots	Can	60	30
Peppers			
pickled, cherry	Jar	36	18
jalapeno	Can	24	12
red sweet	Can	48	24

TABLE 3 - GUIDELINES FOR STORING CANNED FOODS

Item	Packaging	Keeping time in Months	
		40°F	70°F
Pickles			
cucumber, cured	Jar	48	24
.	Can	24	12
cucumber, fresh pack	Jar	36	18
.	Can	18	9
Mixed	Jar	48	24
.	Can	24	12
Relish	Jar	48	24
.	Can	24	12
Pie crust mix	Can	36	18
Pie filling, prepared fruit			
apple, blueberry, cherry			
peach, lemon ⁵	Can	24	12
Piementos	Can	48	24
Pineapple			
dietetic pack	Can	48	24
juice, single strength	Can	48	24
regular pack	Can	48	24
Plums			
dietetic pack, red	Can	36	18
dietetic pack, green	Can	48	24
regular pack, red	Can	36	18
regular pack, green	Can	48	24
Popcorn, unpopped	Can	72	36
Potatoes			
sticks	Can	48	24
sweet	Can	48	24
white	Can	60	30
white, dried, granules	Can	60	36
white, dried, slices	Can	36	18
Prunes, dried	Can	36	18
Pumpkin	Can	48	24
Raisins, dried	Can	36	18
Ravioli w/meat sauce	Can	48	24
Salad dressing			
spoonable ¹	Can/jar	8	5
pourable ¹	Bottle	7	5
Salad oil ²	Can	24	12
Salmon	Can	72	36
Sauces, hot, kitchen, meat,			
soy or worcestershire	Bottle	60	30
Sauerkraut	Can	36	18
Sardines	Can	72	36
in tomato sauce	Can	—	15
Sauce mix, brown gravy,			
spaghetti, taco seasoning	Can	36	18

TABLE 3 - GUIDELINES FOR STORING CANNED FOODS

Item	Packaging	Keeping time in Months	
		40°F	70°F
Sausage, pork, link	Can	60	36
Shrimp	Can	72	36
Syrup			
blended	Can	72	36
maple, imitation	Bottle/can	72	36
Soup, condensed ³	Can	72	36
Soup, dehydrated			
beef, vegetable, noodle	Can	36	18
chicken noodle	Can	60	30
green pea	Can	60	30
onion	Can	60	30
ready to serve	Can	48	24
tomato, vegetable, noodle	Can	48	24
Soup and gravy base			
beef, chicken, ham flavored	Can/jar	60	30
Sour cream sauce mix	Can	24	12
Spinach	Can	48	24
Tamales	Can	48	24
Tomato juice			
concentrated 3 to 1	Can	36	18
single strength	Can (plain)	36	18
.	Can (enamel)	48	24
paste	Can	36	18
puree	Can	48	24
regular	Can	48	24
Tomatoes and okra	Can	48	24
Topping, dessert			
prepared, ice cream, non-acid syrup	Can	72	36
prepared, ice cream, fruit acid syrup	Can	36	18
Tuna			
dietetic water pack, no salt added	Can	72	36
oil pack	Can	72	36
water pack	Can	72	36
Turkey			
regular	Can	72	36
loaf	Can	72	36
Vegetable juice, single strength	Can	36	18
Vinegar	Bottle	60	30
Yeast, bakers active dry	Can	6	1

Footnotes

1. Separates at high temperatures or after freezing.
2. When held below 32°F, may show solid material which will disappear on warming.
3. Cream style soups break down on freezing, but are not spoiled.
4. Highly susceptible to damage by moisture.
5. Freezing alters appearance of starch thickening. Baking restores desirable appearance.

PACKAGED SPECIAL CARE ITEMS

Items in this group consist of food products that are dried or dehydrated or otherwise subject to infestation, or rapid deterioration of quality, or direct spoilage if not handled properly.

Careful, correct storage methods not only prevent damage to items in storage, but assure speed and efficiency in the receipt, handling and distribution of such items. Shipments should be segregated and clearly marked so that the oldest lots, as packed and not as received, are issued first, unless the newer lots show evidence of deterioration or spoilage.

The particular method used for storing each item depends on the nature of the container, the nature of the commodity, and the bursting or breaking strength of the bottom layers. For example, flour, cornmeal or rice may have to be stored in racks to prevent crushing of the bags.

Storage Precautions

Care should be taken that items are not stacked so high as to cause a bursting or crushing of the bottom layers; nor should items be stacked so high that the top layer is subject to the higher temperature more prevalent near the ceiling. Stacking in close proximity to steam or other heated pipes must be avoided.

Pallets or dunnage must be used to raise products off the floor and individual lots piled in such a way as to permit the circulation of air around the lots. Bagged items and those requiring fumigation and insect control should not be stored in large masses in corners of the storeroom or directly against walls; such storage leaves insufficient room for cleaning and inspecting. Palletized storage facilitates handling of the products and reduces losses by breakage in handling. All items should be properly cross-stacked (interlocked) to keep the stack solid and prevent it from toppling.

Storage Periods

The safe storage period for dry food items varies greatly, depending on such elements as temperature, humidity, care in handling, protection from the weather, quality of the food when received and the method of packing. Safe storage periods become very uncertain at extremes of temperature.

An item which has been on hand beyond the safe storage period should be inspected carefully for spillage, leakage, or other damage and if still good, used as soon as possible and should be given priority of usage over newer stocks.

Causes of Product Deterioration

Age. All foodstuffs are subject to varying degrees of natural deterioration which is inherent in the food itself. It should not, however, be confused with the action of micro-organisms, chemical agents, or other outside agents. Such facts compel an observance of the basic principle of storage that the oldest lots of the item always should be used first, except under conditions indicated at the beginning.

Insects (roaches, flies, weevils, and moths). Insects can cause great damage to stored food, attacking both natural and manufactured food. Food stored at temperatures between 60° and 90°F is especially attractive to insects. Infested supplies must be segregated and if not too heavily infested, may be "reconditioned" for use. Cornmeal, especially, is susceptible to insect infestation and rancidity. Insect repellents should be used carefully so as not to contaminate the foods or cause damage by the absorption, by the food, of the fumigant or insecticide flavor. Roaches and flies not only contaminate the foods but may spread disease.

Rodents (rats and mice). Rodents not only physically destroy food by feeding, chewing and cutting the bags for nests or nesting material, but also contaminate food with their excreta and hairs. Rodents are carriers of filth and disease. The importance of controlling these pests is evident and the most effective method of control is to prevent entry of these animals.

Freezing. Dry products such as grains, flour, sugar, starch, cereals and dehydrated foods ordinarily are not injured by freezing.

Heat (high temperatures). A high temperature over long periods of time is very detrimental to the keeping of almost all food products. High storage temperature encourages bacterial growth, mold growth and insect infestation and is particularly dangerous when accompanied by high humidity. Chemical action may accelerate, causing rancidity in some items.

Flour and associated products (barley, cereals, cornmeal, cornstarch, cracker and biscuit, hominy, noodles, oats, rice, spaghetti and macaroni, tapioca, and uncooked wheat) are subject to insect infestation, particularly at high temperatures. Flour and cereals will absorb odors and should be kept away from food items or materials giving off distinctive odors.

Cocoa will keep for years under cool, dry storage conditions. the Formation of a white "bloom" (described as a "whitening" or "graying" due to storage under fluctuating temperature) has little or no effect on the flavor of cocoa. Long periods of storage at higher temperature may cause mustiness or rancidity. Cocoa does absorb moisture and odors. Cans, therefore, should be kept tightly closed. Roasted, ground coffee rapidly develops a weak and stale flavor. If coffee is not hermetically sealed, it will absorb odors affecting flavor.

Moisture (humidity). High humidity is detrimental to stored food items in many respects, accelerating the growth of bacteria and molds, promoting insect infestation and causing mustiness in flour, rice and similar foods. High humidity causes products which readily absorb moisture, such as sugar and salt, to cake and become hard. Tea will absorb odors and high humidity causes it to become musty and sour.

It should be emphasized that dehydrated products are perishable and should not be handled or stored carelessly. Such products are subject to moisture absorption, insect infestation and mold. AS loss of flavor and discoloration (darkening) will occur with age. This action is progressive and is accelerated at high temperatures. Dried vegetables and fruits are subject to insect infestation and molding (particularly fruits) and should be inspected at frequent intervals.

Ventilation. Where sharply fluctuating temperature and high humidity prevail, the lack of proper ventilation may cause excessively high temperatures. Proper forced

ventilation is one of the most important factors in protecting foods, particularly in warm climates. See the subsection on The Storage of Canned Products.

Over-aged Stock. Any product which is received or stored for periods longer than those shown on the storage life table does not necessarily mean that the product is unfit or undesirable. Items stored for periods in excess of the storage life shown in the table, but at temperatures lower than those listed therein, should not be automatically considered as over-age stock.

Containers. Since the container is one of the factors in the overall keeping period of an item, the container should be considered if it markedly differs, that is flour in bags vs. cans; coffee in bags vs. coffee in vacuum-packed tins. Thus buying consideration should be guided by the appearance, odor, color and condition of the item.

Dry products are not always subject to the same spoilage as are other foods. Their desirable properties of flavor, odor and taste often depend upon very unstable or volatile components, and deterioration may result from a breakdown or loss of these constituents. However, excessive heat and moisture, contamination by insects, rodents and microorganisms, dirt and dust, and inadequate packaging and packing can be major factors contributing to deterioration.

Explanation for Table 4.

The storage periods shown in Table 4 represent the maximum times (from packing) before quality deterioration can be expected to become noticeable. As can be seen from Table 4, temperature is the main consideration, although packaging is almost as important.

THE BEST PROCEDURE IS TO MAINTAIN OPTIMUM TEMPERATURES AND TURN INVENTORY EVERY TWO MONTHS, PARTICULARLY IN WARM CLIMATES.

Be forewarned, however, that infestation (the hatching of weevils) in flour, cornmeal, rice and other grains may occur in a shorter period of time if temperatures escalate well above 80° or 90°F and hold this level for several days.

NOTE:

Tempering: If grain products and other dried foods are held at cooler temperatures (below 40°F) or in a freezer for safekeeping, they should be brought back to room temperature gradually, or used directly. Temperatures well above room temperatures should be avoided after chill or freezer storage. Mistreatment of this sort will promote mustiness and off-flavors, depending on the product. Transferring canned goods directly from chilled or freezer storage into hot and humid rooms or vehicles may cause condensation on the cans which may lead to severe rusting.

TABLE 4 - GUIDELINES FOR STORING FOODS REQUIRING SPECIAL CARE

Item	Packaging	Keeping time in Months	
		40°F	70°F
Antioxidant compound	Bag	60	36
Apricots, dried	Carton	24	3
Bakery mixes	Bag/carton	12	6
Baking powder	Can	24	12
Baking soda	Carton	indef	indef
Barley, pearl ¹⁰	Bag/carton	36	24
Beans, Dry ⁵	Bag/carton	24	12
Beverage base powder	Envelope	48	24
Bread crumbs	Bag	8	4
Cake, fresh			
layer, coffee	—	(2days)	—
loaf	—	(4days)	—
Candy			
carmel	Box	12	9
coated (bridge mix)	Box	24	12
starch jelly	Box	24	12
Cereal			
quick cooking ¹⁰	Carton	12	12
ready to eat, rolled oats	Package	24	12
sugar coated ¹⁰	Package	12	12
Chalupa shells, corn	Container	12	6
Cheese, grated	Container	18	6
Chewing gum	Carton	8	4
Chocolate, cooking			
semi-sweet chips ⁷	Package	36	18
unsweetened ⁷	Carton	48	24
Cocoa, natural	Carton	36	18
Coconut, sweetened	Container	24	6
unsweetened	Bag	24	6
Coffee, Instant	Envelope	36	18
.	Jar	72	36
roasted and ground	Pouch	9	2
Cookies	Carton	6	4
Corn chips	Package	1	1/2
Corn flake crumbs	Carton	24	12
Corn meal	Package	24	12
Crackers			
graham	Carton	4	2
other than graham	Carton	12	6
crumbs	Bag	12	6
Cream substitute	Envelope	48	24
Cream of tartar	Container	indef	indef
Cup, ice cream, edible	Box	24	12
Currants, dried	Carton	24	12

TABLE 4 - GUIDELINES FOR STORING FOODS REQUIRING SPECIAL CARE

Item	Packaging	Keeping time in Months	
		40°F	70°F
Dessert powder			
gelatin base, all flavors ⁶	Package	36	18
starch base, all flavors ⁶	Package	36	18
instant, all flavors ⁶	Carton	36	18
Doughnuts			
cake	Package	(3 days)	—
yeast	Package	(1 day)	—
Emulsifier, bread and rolls	Bag	24	12
Flour			
Rye ⁹	Bag	24	12
Wheat	Bag	24	12
Fruitcake	Box	12	6
Fry mix, breading	Bag	36	18
Garlic, dry	Box	5	4
Gelatin, plain, edible	Container	72	36
Hominy, grits	Container	24	12
Inhibitor, mold, bread & rolls ⁶	Bag	18	9
Jelly, fruit	Package	24	12
Lard	Carton	12	6
Macaroni ⁶	Carton	72	36
Marshmallow	Container	12	9
Milk,			
chocolate, dry, vac. pack	Envelope	40	20
no vacuum pack	Envelope	24	12
dry, non fat	Drum/bag/carton	24	12
Monosodium glutamate	Container	indef	indef
Noodles, egg ⁶	Carton	72	36
Nuts, unshelled	Bag	24	12
Parsley, dehydrated	Can	30	24
Peas, dried ⁵	Bag/carton	24	12
Pie shell, graham cracker	Container	8	4
Popcorn, unpopped	Carton	2	1/4
.	Cello bag	24	3

TABLE 4 - GUIDELINES FOR STORING FOODS REQUIRING SPECIAL CARE

Item	Packaging	Keeping time in Months	
		40°F	70°F
Potato			
Chips	Package	1	1/2
White, dehydrated slices	Poly bag	16	8
.	Kraft bag	12	6
Prunes, dried	Carton	18	9
Raisins, dried	Carton	18	9
Rice			
instant ⁶	Carton	36	18
milled ⁶	Bag	36	24
parboiled ⁶	Container/bag	24	12
Rolls, fresh			
bagel	Package	(1 day)	—
sweet or finger	Package	(2 days)	—
english muffins	Package	(7 days)	—
Salt			
celery, garlic, onion	Container	72	36
substitute	Envelope	indef	indef
table	Bag/envelope	indef	indef
Shortening compound ⁴			
bakery type ²	Cube/can	48	24
deep fry cooking, fluid	Can	48	24
deep fry cooking, plastic	Can	48	24
general purpose, regular	Can/cube	48	24
general purposes, high stability	Can/cube	60	30
Soups, dehydrated			
beef, instant	Package	24	12
beef, noodle	Package	24	12
chicken, chunk	Package	24	12
chicken/chicken flavor, instant	Package	24	12
chicken, noodle	Package	24	12
cream of onion, instant	Package	24	12
cream of potato, instant	Package	24	12
green pea	Package	24	12
onion	Package	24	12
onion, instant	Package	24	12
vegetable	Package	24	12
Soup and gravy base			
beef flavored	Envelope	24	12
chicken flavored	Envelope	24	12
ham flavored	Envelope	24	12
Spaghetti	Carton	72	36
Spices, seasoning herbs	Can	48	24
.	Container	36	18

TABLE 4 - GUIDELINES FOR STORING FOODS REQUIRING SPECIAL CARE

Item	Packaging	Keeping time in Months	
		40°F	70°F
Starch			
corn, edible ¹⁰	Carton	60	36
pregelatinized, edible	Bag	96	48
Sugar			
Brown ⁸	Carton/bag	36	18
Confectioners ⁸	Carbon/bag	36	18
refined, granulated ⁸	Bag/envelope	indef	indef
substitute	Envelope	indef	indef
Tapioca ^{6, 10}	Carton	60	48
Taco shells, corn	Container	12	6
Tea			
Black, bags or loose	Can/carton	36	18
Instant	Envelope	36	18
Yeast food	Bag	48	24

Footnotes

1. Flour should be stored under cool, dry conditions. The major problem is protection against dampness, insects and rodents. Low temperatures, 32° - 40°F protect against insects, relative humidity greater than 70 percent leads to mustiness. Best storage conditions are at temperatures below 50°F and approximately 60 percent relative humidity.
2. Humidity above 90 percent will cause caking. "Caked" salt is usable.
3. When held below 32°F may show solid material which will disappear on warming.
4. If held above 90°F, changes may occur in texture unfavorable to normal creaming properties.
5. High temperatures harden, high humidity causes molding.
6. Highly susceptible to damage by moisture.
7. Do not store near other material capable of imparting odor to chocolate.
8. Keeping time based on relative humidity not more than 60 percent. For storage longer than one month, sugar should be covered with tarpaulins and not stored on damp or concrete floors or near cold walls.
9. Rye flour loses its most delicate flavor after two months at 40°F, or one month at 70°F. After this time, further flavor change is very slow. It is said that only experts can detect this first, subtle flavor change.
10. The storage time of these grain products is taken from the 1969 edition because the storage time is shorter.

PART III
KITCHEN CARE

INTRODUCTION

A proper program of kitchen care focuses on three specific areas of endeavor as follows:

- Receiving,
- Storage and
- Food safety

RECEIVING

The manner in which receiving functions are performed may vary from one operation to another depending on the relationship which exists between the supplier and the buyer.

An agency which receives kitchen deliveries on a week to week basis from the same local supplier(s), may be able to exercise less intensive checking of deliveries on arrival because immediate recourse is available.

On the other hand, an agency which receives a "one-shot" delivery from a (remote) supplier must exercise much more intensive checking procedures at time of arrival.

It is important for a buyer to be aware that once a delivery has been receipted (signed for), the proof of improper delivery rests on the receiver. Exceptions to this rule exist only when a discrepancy has been noted and attested to by both the receiver and the delivery man. Moreover, discrepancies are much easier to rectify, after the fact, when the supplier is delivering on a weekly basis. Under such circumstances, a buyer has the leverage necessary to influence compliance by a supplier, provided that the "fairness" criteria is met.

Regardless of the circumstances of supply, however, certain checking procedures are mandatory for all receivers. They are as follows:

Accountability

- Count - It is absolutely essential for the receiver to count the total number of pieces delivered. Verification can be made by checking the actual count against the number of pieces indicated on the delivery ticket.

- Item Check - Verify the correctness of the items by designation and count. Contract arrangements with suppliers must require that the delivery tickets include an adequate item description, especially product code numbers. In checking a delivery, therefore, the receiver need only check product code numbers on the delivery ticket against the product codes on the cases. In the absence of code numbers, a more thorough check has to be made to make sure that if Red Label Green Beans are ordered, Red Label Green Beans are delivered, for example.
- Errors - Under today's rapid order selection systems in distribution warehouses, an error level of one or two percent is not uncommon. This means that out of three hundred line items delivered to your kitchen, two may be either "wrong items" or shortages. The likelihood is that peas will be substituted for beans or Blue Label for Red Label, for example. Under such circumstances, the receiver may elect to keep the item rather than reject it. If however, steak is delivered instead of ground beef, an exchange may be necessary. Such exchanges can and should be made within 24 hours.

Shortages, on the other hand, may create a different problem, particularly if the food service director needs the items right away. In which case the supplier must (and usually will) take the necessary steps to satisfy the need. To this end, contracts with suppliers should contain a "buy against" clause. This precaution enables the buyer to purchase a "short" item elsewhere if it is not delivered in the required time, and hold the contractor responsible for the difference in cost.

- Out-of-Stock - Suppliers should be instructed to make reasonable substitutions if an item is temporarily out-of-stock. However, a food service director should discontinue accepting bids from distributors who do not adequately manage their inventories.

But even under the best circumstances, occasional outages occur. Under such circumstances, the supplier should be instructed to substitute "equal or better" to an equal or lower price. For example, if Red Label is Grade A and Blue is Grade B, Red can be substituted for Blue but only at the Blue price. When substitutions are made intentionally, the supplier

should be instructed to have the delivery ticket read, "Red Label beans out-of-stock - substitute Blue Label, etc."

- Prices - Checks can be made of prices on delivery tickets (invoices) after a delivery is complete but before payment is made to the vendor. in today's high tech computer age, the chances of price errors are small, However, it is necessary to check prices against quotations and bids on each invoice. Extra thorough checks will have to be made on delivery tickets which are written by hand or when merchandise is delivered by distributors with proven slip-shod methods.

Quality Assurance

When products are delivered to food prep sites by commercial distributors (as opposed to central warehouses by packers), quality checks at time of receiving can be accomplished largely by checking product codes and/or grade labels.

However, unlabeled and uncoded items such as meats and seafood may have to receive more thorough quality checks on arrival. This means that the receiver may have to open cases of pork chops, for example, to ascertain that the quality ordered is the quality received.

Also, close checks are necessary for produce on arrival, particularly with respect to condition (maturity, decay, etc.). Close checking is necessary also for milk, ice cream and other frozen foods, on arrival, to make sure that the milk is not sour or the frozen product defrosted.

Further checks on quality and condition can also be made when the stock is put on shelves and later when the containers are opened and the product prepared for serving.

Food safety

When products are received at food prep sites, they must be checked for food safety. Checking must continue through the various stages of opening the containers, examining the product, preparing and serving.

Check containers on arrival and while storing for pest infestation, particularly for roaches and other insects and for rodent droppings. One of the main sources of roach infestation in kitchens are transfers from wholesale cartons. Baby roaches, for example, can easily go undetected unless close checking is exercised.

Additional Checks

Although the foregoing receiving guidelines are usually adequate for labeled products arriving at food prep sites from commercial distributors, the following checklist might be helpful in checking generic items from various sources.

- * Check net weights at random when opening containers by weighing the filled container, pouring out the contents and then weighing the container. The difference represents the net weight as shown on the container.
- * Check weigh variable weight items such as roasts, poultry and seafood.
- * Check drained weight of canned items from time to time. The drained weight of a product is determined by emptying the contents of the container upon a U.S. Standard No. 8 circular sieve, 12 inches in diameter for No. 10 cans, so as to distribute the product evenly, inclining the sieve slightly (17 to 20 degrees) and allowing two minutes for the product to drain. The weight of the drained product is the weight of the sieve and the product less the weight of the empty sieve.

The recommended drained weight of a product can be found either in packers' literature, in UDSDA Grade Standards, or from the USDA-FNS "Catalog of Specifications".

- * Check origin of products whenever sources are specified in the bid document upon delivery. check the labels on cartons or cans to determine if "the pineapple came from Hawaii" as may be required.
- * Check product styles, i.e., sliced peaches, french style green beans, etc., to assure conformance with the bid documents. This can be done by checking the labels on the cartons or cans.

- * Check packing media for conformance with bid specifications e.g., syrup pack, oil pack, water pack, etc.
- * If the product is supposed to come from an inspected plant, make sure that the inspection logo (and plant number) appear on the cartons. See USDA-FNS manual "Catalog of Specifications".
- * Check frozen products to see if they are hard frozen. Check for refreezing. If a product was thawed and is refrozen, ice crystals will usually be present and individually quick frozen (IQF) products may be refrozen in mass rather than individually.
- * Check containers to see if they conform to specifications, e.g. enamel lined cans, poly-lined cartons, etc.
- * Inspect label or literature information as related to number of servings, ingredients, additives and "use before date".
- * Check the physical condition of product on arrival, i.e., dented cans and soiled cartons, as well as the condition and maturity of produce, meats, etc.
- * Check produce for decay on arrival. At least 90 percent should be free from defects such as insect damage and broken fruit as well as free from other defects such as insect larvae and "seeders".

STORING

Virtually all food service establishments have at least three facilities for storing foods and other supplies. These consist of a pantry (dry storage area), a freezer and a cooler (refrigerator). One of the most common causes of quality deterioration in foods is the lack of proper or adequate holding facilities.

The amount of space available should be sufficient to accommodate at least a two- or three-week supply which normally allows space for sufficient back-up of alternative items. Although many operators have adequate space, they often do not exercise discipline in ordering and selecting stock, nor do they keep products well organized and readily accessible.

Kitchen storage space requirements based on food utilization cost might be calculated as follows: A school with 1,000 students may have a food cost of \$1,000 per day @ \$1.00 per participating student. \$1,000 divided by \$20 per case food cost average commercial value would = 50 cases use per day x 5 = 250 cases per week x 8 weeks inventory = 2,000 cases capacity required x 3 @ one-third net piling = 6,000 cubic feet of storage space required. @ 10 feet high = 600 square feet. @ 50% dry, 30% frozen and 20% chilled, requirements would be as follows:

- Dry 300 square feet (15'x20'x10')
- Frozen 180 sq. ft. (9'x20'x10')
- Chilled 120 sq. ft. (8'x15'x10')

Dry Storage

Pantry space for dry products should be well racked and organized so that stock rotation can be easily practiced and products easily identified. It is important to ventilate this room so as to maintain a temperature of not less than 40°F during the winter and not more than 70°F during the summer. As shown in Part II, the quality of canned and dried foods are maintained much longer at 70°F than 90°F. Hot storage rooms should be avoided.

It might be necessary to store items (such as corn meal) which are subject to infestation, under refrigeration if the product is to be held for longer than a month and/or if temperatures in the pantry are prone to escalate above 70°F. See Part II "Storage Tables" for general guides for storing foods at food prep sites.

Freezer Storage

Many food service establishments have insufficient freezer space. This condition either restricts the amount of frozen food they can use or inhibits the orderly arrangement of inventory and good stock rotation. Although a walk-in freezer is preferred for most larger establishments, reach-in, up-right units may be used efficiently in small operations. A small reach-in freezer is often desirable in addition to a walk-in unit for keeping small packages and for holding products which are in the process of being prepared for serving. A temperature of 0°F is satisfactory for most freezers. If the temperature goes up to 5°F when the freezer is used frequently during the day, it will probably fall back to zero overnight.

Chilled Storage

For very best results, a food service facility should have three walk-in coolers. One can be designated as a dairy cooler for holding packaged merchandise at 32° - 35°F for quick chilling products which should be served cold. To best maintain the quality of milk and other dairy products, boxed meat, premixed vegetable salads and many other products, a cooler of this temperature is most necessary.

It is also helpful to have a second "dry" cooler which will hold a temperature of 38° - 45°F for products which store best at this temperature range. Such a cooler would be equipped with a thermostat so that the temperature could be set as required. Whereas, a temperature of 38°F might be preferred for most products, 45°F would be preferred if fresh eggs were stored in quantity. Some vegetables which cannot be stored below 50°F without damage may have to be stored in the pantry for a short period, or in a 45°F cooler with the thermostat turned above 50°F. See Part II - Storage Tables.

For maximum quality protection, an establishment should also be equipped with a "wet" cooler which can be set at 38°F, although for some items the temperature can be as high as 50°F. This cooler should have a relative humidity of 90 - 95 percent. To hold a high relative humidity, it may be necessary to install a mechanical humidifier.

If an establishment can justify only one cooler, it should have a temperature range from 32° - 45°F, according to the thermostat setting. The relative humidity should be 85 percent at 32°F, and 95 percent at 45°F. This range is attainable if the proper equipment is selected. Such refrigeration equipment must have

automatic defrost and a temperature differential between air outflow and return of about 15°F.

Monitoring Temperatures

The temperature in all food storage areas including the pantry, should be monitored by a dependable thermometer, preferably the remote dial type. With this type of thermometer, the bulb, which is the sensitizer, is inside the room and the dial outside by the door where it can be easily read. (See Supplement I). Coolers should also be equipped with accurate relative humidity gauges.

Food Safety

Because master cartons can be a source of contamination, the contents of most boxes should be removed at the time the product is stored. Sometimes, however, this is not practical as in the case of frozen french fries and other vegetables because the product is packed in bags which stack poorly. Also, useful information such as style of pack is sometimes listed on the master container and not on individual packages.

Food held in any walk-in area should be tightly packaged at all times. In as far as practical, prepared foods should be held in reach-in refrigerators and should also be packaged or covered to prevent transfer of flavors and odors and to minimize dehydration.

PREVENTING FOOD POISONING AND INFECTION

Although the following text is applicable to the transporting, storing and delivery of foods at all levels of physical distribution, it is most applicable to handling of foods in food preparation kitchens after containers are open.

The following text is quoted directly from The University of Georgia, Bulletin 901, "Preventing Food Poisoning and Food Infection", April, 1984, Cooperative Extension Service, and prepared by Estes Reynolds, George Schuler, William Hurst and James A. Christian, Extension Food Scientists. Appreciation is expressed to the Extension Food Science Department for the use of this material.¹

BACTERIA FOOD POISONING

Food safety concerns every food handling facility. Each year thousands of individuals suffer the discomfort and pain resulting from food-borne illness. To prevent such illnesses, understanding the bacteria that cause food poisoning is essential.

The term "food poisoning" is generally used to describe illness caused by all types of food-borne microorganisms. Food poisoning and food infection are different, although the symptoms are similar. True food poisoning or food intoxication is caused by eating food that contains a toxin or poison due to bacterial growth in food. The bacteria which produced and excreted the toxic waste products into the food may be killed, but the toxin they produced causes the illness or digestive upset to occur. Staphylococcus aureus and Clostridium botulinum are two species of bacteria that cause food poisoning.

1. Available at a modest cost from the University of Georgia, Cooperative Extension Service, Extension Food Science Department, Athens, Georgia 30602. Other relative publications from the same source are:

#817 - What Are Bacteria?

#693 - Food, Hands and Bacteria

#906 - Food Spoilage and You

Food infection is the second type of food-borne illness. It is caused by eating food that contains certain types of live bacteria which have grown in the food. Once the food is consumed, the bacterial cells themselves continue to grow and illness can result. Salmonellosis is a good example of food-borne infection. Vibrio parahaemolyticus is another infection organism and is found primarily in shellfish from polluted waters.

Clostridium perfringens grows in warm foodstuffs like beef stews or gravies and produces toxins. It also causes a food infection by continuing to grow after it is eaten.

FOOD POISONING MICROORGANISMS

Staphylococcus aureus

Staphylococcus is a true food poisoning organism. The coccus, or round-shaped, organism appears in grape-like clusters when viewed under a microscope. It produces a heat stable toxin when allowed to grow for several hours in foods such as chicken pot pie or cream filling. This bacterial growth may not cause any off color, odor, or textural or flavor change, but the toxin will be secreted into the food.

Staphylococcus toxin is not markedly affected by heating or freezing as it is heat stable. Even if the food is heated before eating, the poison in the food will cause illness although the heat has killed the bacterial cells.

The major sources of staph contamination are people and domestic animals. It is commonly found in the nasal passages and on the skin of most people. Staphylococcus bacteria can be found in cuts, scratches, boils and pimples on the skin. These bacteria get into the food from cuts and sores on workers' hands or from sneezes during food preparation. This organism grows best at body temperature (98°F), but it can grow over the much wider range of 50° to 115°F. It prefers food with a pH above 4.5, so it is seldom found in acid food such as tomatoes, pickles and citrus juices.

Symptoms of Staphylococcus Food Poisoning - The symptoms produced by the staph toxin occur very rapidly, four to six hours after eating. These include headache, nausea, vomiting, stomach cramps, diarrhea and a general washed out feeling. Many

people suffer from staph food poisoning and never report it or don't realize they have it. Although a large number of cases occur yearly, only a fraction of them are identified as being caused by staph bacteria.

Prevention - The best prevention of staph food poisoning is to properly store food and reduce the temperature below 40°F within four hours after preparation or serving. In order for staph to grow and produce toxin, it must have sufficient time. Approximately two to four hours, depending upon conditions, are required at a suitable growth temperature for toxin production. Therefore, it is important to cool or heat foods through the danger zone of 40°F to 140° as rapidly as possible.

A second way to prevent contamination by staph organisms is by keeping cuts or sores covered and avoiding hand contact with cooked food. Workers' hands are major sources of contamination. Good personal hygiene and good hand washing habits are essential in preventing contamination.

Clostridium botulinum

The other type of true food poisoning is botulism. This organism has received much publicity and rightly so. It does not just cause illness, it is fatal in 60 percent of the cases. It is found in the soil, in water, in sewage and in the intestines of humans and animals. This organism does not require oxygen to grow and thus is referred to as an anaerobe. Clostridium botulinum is a rod-shaped organism that forms a heat resistant spore. You can kill the vegetative cells by heating or cooking, but the spores require 240°F, or pressure canning, to kill them. These spores are much like seed. When they are placed in a dry place or under adverse conditions, they will not germinate. They can withstand long periods of dry conditions and can withstand boiling water for several hours. Once these spores are placed in a food with the proper temperature, moisture, and low acid conditions, they will germinate and grow. Once the bacterial cells are produced, they can then grow and have the capability of producing toxin. It is for this reason the open kettle method of canning is not suitable for low acid foods.

One can easily understand how Clostridium botulinum, a soil and water organism, could gain entrance into a foodstuff. Take green beans for example. Beans grow in the garden near the ground and often have particles of soil attached to them when they are brought in for processing. Inadvertently, minute particles of soil containing the Clostridium organisms may adhere to the beans. Since this organism

is anaerobic, food in which it will grow must be free of oxygen. If food is canned properly, at the specified time and temperature, the process adequately kills all vegetative cells as well as spores of Clostridium botulinum.

The key to the growth of Clostridium botulinum and product of its toxin is the pH of the canned food. All fruits, vegetables and meats carry this microorganism, but because of their acid nature (pH below 4.5) fruits will not permit its growth. Meats and most vegetables are not acid foods and will support its growth. They have a pH above 4.5.

This microorganism does not necessarily produce adverse affects in the food during growth. For example, the toxin can be present and there will be no swelling, off-color, or off-odor. Any time you open a processed vegetable or meat, cook it before you eat it.

In order for the toxin to develop, the temperature during canning must be inadequate to kill the spores. This organism produces at least seven known toxins. Types A, B and E are most commonly associated with human illness. Toxins are produced best at temperatures between 85°F and 95°F but have been shown to be produced from 38°F to 118°F.

Symptoms of Botulism - In a large number of cases, death is the final result of a botulism outbreak. Specific symptoms may include fatigue, dizziness, headache, vomiting, diarrhea, nausea, acute indigestion followed by constipation, double vision, and difficulty swallowing or speaking. Throat constriction and muscle paralysis come in the final stages, followed by death due to suffocation.

Prevention - The major source of the problem is home canned foods which have not been properly processed. About 20 cases of botulism occur each year in the United States because of improperly home canned foods. Remember, always check home pressure cookers to make sure all dials and systems are functional before using a source such as the "Ball Blue Book", or your local extension office.

It is interesting to note that only three outbreaks of botulism from commercially canned foods have occurred since 1925, resulting in four deaths; one in 1941, two in 1963 and one in 1971. This is a remarkable record for the commercial canning industry when you consider that over 17 million cans of foods are sold each year in the country. The saying is you stand 100 times greater chance of being struck by lightning than of getting botulism from commercially canned foods.

FOOD INFECTION MICROORGANISMS

Salmonellae

Over 1,200 species of Salmonella exist. All are potentially dangerous to people. Salmonella live in the intestinal tracts of humans and animals and are continually passed from person to animal, animal to person, and person to person in a continuous cycle. The prime sources of Salmonella contaminants of our food supply come from the intestines of animals. Vermin such as rodents, roaches and flies also carry Salmonella.

Salmonellosis has occurred from the consumption of contaminated foods such as cheese, milk, eggs, meat, poultry, pastries, cakes and candies.

Salmonellosis is caused when we eat foods which contain the organism. This is a food infection. These organisms continue to grow and multiply in the small intestines. The result is sickness eight to 24 hours after we eat the contaminated food.

Salmonellosis is the most widespread of all food-borne illnesses. More than 20,000 cases are reported to the Center for Disease Control annually. This is probably only a small percent of the cases that actually occur each year.

Symptoms of Salmonellosis - Salmonellosis is characterized by an abrupt onset of diarrhea, nausea, abdominal pain, prostration, chills, fever and vomiting. These symptoms vary in intensity from slight to severe. The symptoms rarely cause death except to infants or the elderly who may rapidly dehydrate.

Prevention - Salmonellosis can easily be prevented. Cooking kills this organism. Sickness most often occurs due to contamination of the food after cooking. Salmonella can easily be controlled by good sanitation practices to prevent cross

contamination. Cooked food should never be prepared on cutting boards or equipment that has been used to prepare raw products.

Since food infection type bacteria are killed by cooking, foods such as meat, poultry and eggs should be adequately cooked to prevent possible ingestion of the organism.

Prompt refrigeration of cooked foods or leftovers is the first line of defense against this food infection organism. Never store food in containers which will not allow rapid cooling of the food product. Use shallow pans not more than three inches deep. If large quantities must be chilled, use commercial heat exchangers to chill product or agitate the foodstuff in an ice water bath until the product is chilled below the danger zone of rapid bacterial growth (40°F).

Clostridium perfringens

Clostridium perfringens food poisoning has often been tagged as a problem of the food service industry since most outbreaks are associated with mass feeding operations such as cafeterias or banquets. Each year, a large number of outbreaks of food poisoning from Clostridium perfringens occur in home kitchens and fast food establishments, especially those serving gravy, meat stews or broths.

Clostridium perfringens, a soil and water organism, is like C. botulinum in that it is a spore former, it is not killed by boiling, and it is an anaerobe. This means that it grows best when there is no air or free oxygen present in its environment. This organism also has strict requirements for growth, thus it is normally associated with meats, gravies or meat dishes. This organism is somewhat different from other food poisoning bacteria because it produces a toxin and also causes a food infection by continuing to grow in the digestive system after it is consumed.

C. perfringens can grow over a wide range of temperatures, but grows very slowly at low temperatures. Unlike most other food poisoning bacteria, these bacterial spores will germinate and grow best at temperatures between 100°F and 117°F. Unfortunately, this is a temperature range found quite frequently in warm food holding areas in food service facilities, such as steam tables and oven type warmers.

The major reasons C. perfringens is associated with food service or mass feedings are that it requires an environment free from air, storage time, high temperatures and a strict nutrient supply. These conditions are usually met when meat stews, sauces, gravies and soups are improperly stored. The food is usually cooked in a large, deep container. After cooking, one assumes (incorrectly) that no bacteria are present, and the large container is placed in the cooler. Because of the container's size and depth, rapid cooling is impossible. The spores germinate and grow to large numbers. When the product is ready to be used, it is heated in the same container. Because of the container's size, reheating is difficult and the bacteria are not killed. When the food is eaten, a large number of people are usually affected.

Symptoms - The symptoms for this food poisoning are relatively mild in most cases and may be called a "stomach virus" and go unreported. If the outbreak occurs at a large gathering, however, such as a banquet or church function, it is usually reported and documented.

Symptoms of the illness include abdominal cramps, diarrhea, occasional nausea, and sometimes fever or vomiting. The symptoms usually appear four to 22 hours after eating and may persist for one to five days.

Prevention - Many foods such as meat and poultry may carry the organism, but the mere presence of C. perfringens in food is not enough to cause illness. Millions of growing cells are needed. The prevention of growth of this organism is best accomplished by following the standard food service practices of rapidly chilling prepared foods in shallow containers and keeping cold food cold and hot food hot. Remember, always reduce the level of contamination by keeping all work areas clean and sanitary.

Vibrio parahaemolyticus

Vibrio parahaemolyticus is a particular food infection organism not familiar to many people; it nevertheless is an important problem. This organism is mostly associated with shellfish or other fish coming from contaminated or polluted marine waters.

Vibrio parahaemolyticus is a comma-shaped organism which grows at lower temperatures, 50°F, as well as higher temperatures. It is also a halophilic organism and is able to grow well in salt water.

Symptoms - As other food infection organism, large numbers are required to cause illness. Abdominal cramps, nausea and vomiting may result.

Prevention - The major prevention of this food-borne illness stems from the banning of contaminated waters to fishermen. However, the best assurance for a food service establishment to prevent Vibrio food poisoning is to keep shellfish properly refrigerated to prevent growth. Always be sure the shellfish are thoroughly cooked. Since many fish, such as oysters, are eaten raw, the restaurant should buy from reputable sources coming from known waters.

TRICHINELLA SPIRALIS

No food poisoning and food infection report would be complete unless we cover the basics for controlling the ancient Trichinella spiralis. Trichinosis is an exceedingly painful disease and is among the most dreaded human illnesses. This microscopic parasite resides in the muscle of infected pork or in other animals which eat flesh. Although it is not a bacterial food infections, it is an important food-borne illness.

Symptoms - During the period when the worm burrow into the intestinal walls and lay eggs, human symptoms are nausea, vomiting and diarrhea. When the larvae encyst in the muscle, the symptoms are extreme muscular pain, edemas, enlarged lymph nodes and persistent fever.

The most critical phase of illness comes when the larvae grow and begin to coil. Edema, toxemia and dehydration occur. Death may follow. The disease lasts from two to eight weeks.

Prevention - Cooking the food breaks the cycle. Prevention is easy. Cook all pork well done to a temperature of 165°F. For microwave cooking of fresh pork, rotate the cut often during cooking. Cook to a uniform doneness of 170°F internal temperature. Remove cut from oven, wrap in foil, and hold for 15 minutes prior to serving to allow the heat to equalize throughout the cut.

SUMMARY

To prevent food-borne illness, follow these suggestions.

1. Limit the introduction of microorganism into the food by washing and sanitizing your hands before handling food; wash all raw foods, clean and sanitize all food equipment, utensils and contact surfaces.
2. Destroy the microorganisms that may have contaminated the food by properly cooking the foods, reheating food rapidly to above 140°F, and holding all hot foods above 140°F.
3. Limit the growth of microorganisms by promptly refrigerating leftovers, rapidly chilling hot foods by using shallow containers, and checking your refrigeration to ensure proper temperature control.
4. When in doubt, throw it out.

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Bacteria DOUBLE



every half-hour ————— at 90°F.

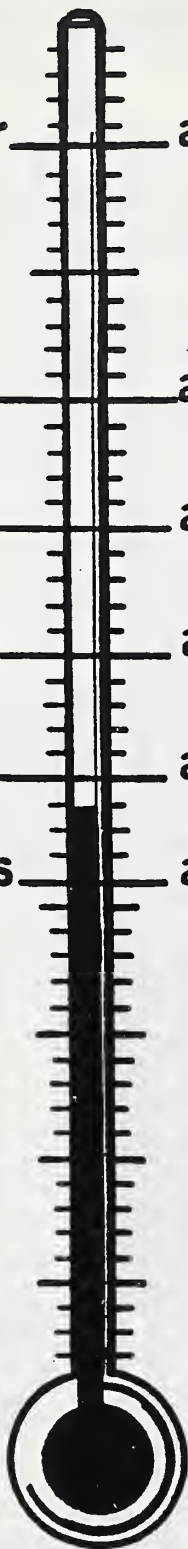
every hour ————— at 70°

every 2 hours ————— at 60°

every 3 hours ————— at 50°

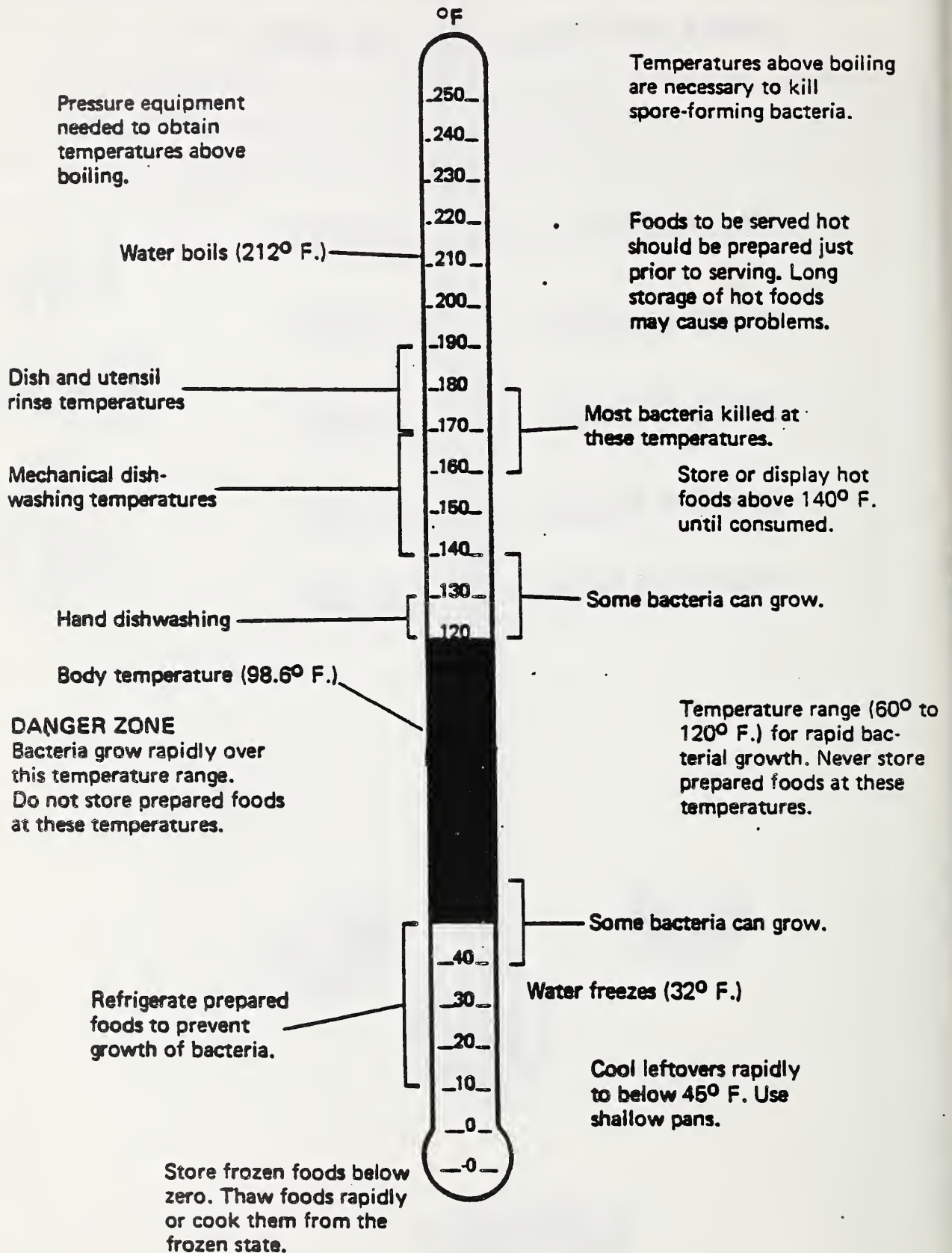
every 6 hours ————— at 40°

every 20 hours ————— at 32°

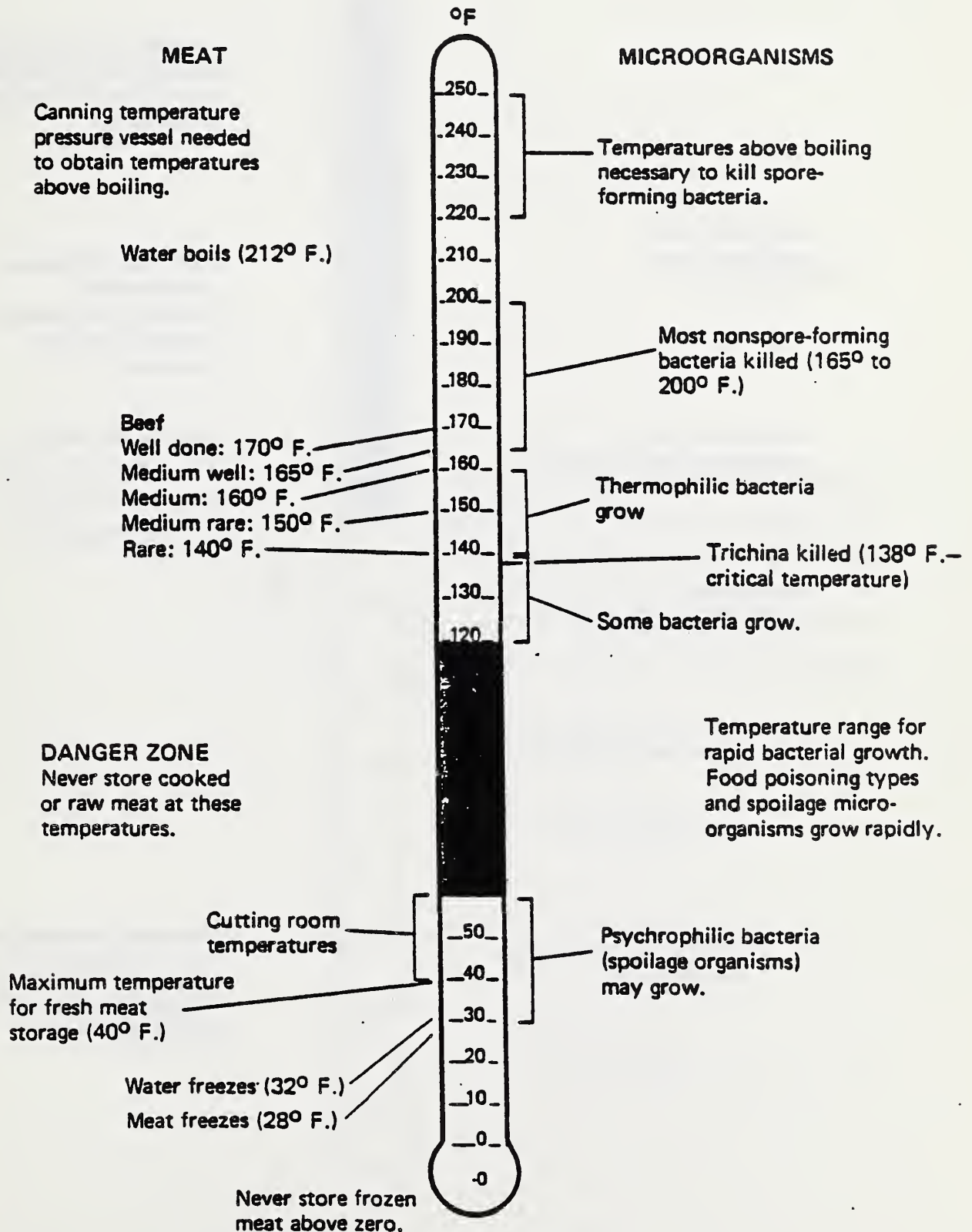


Life
BEGINS
at
40°

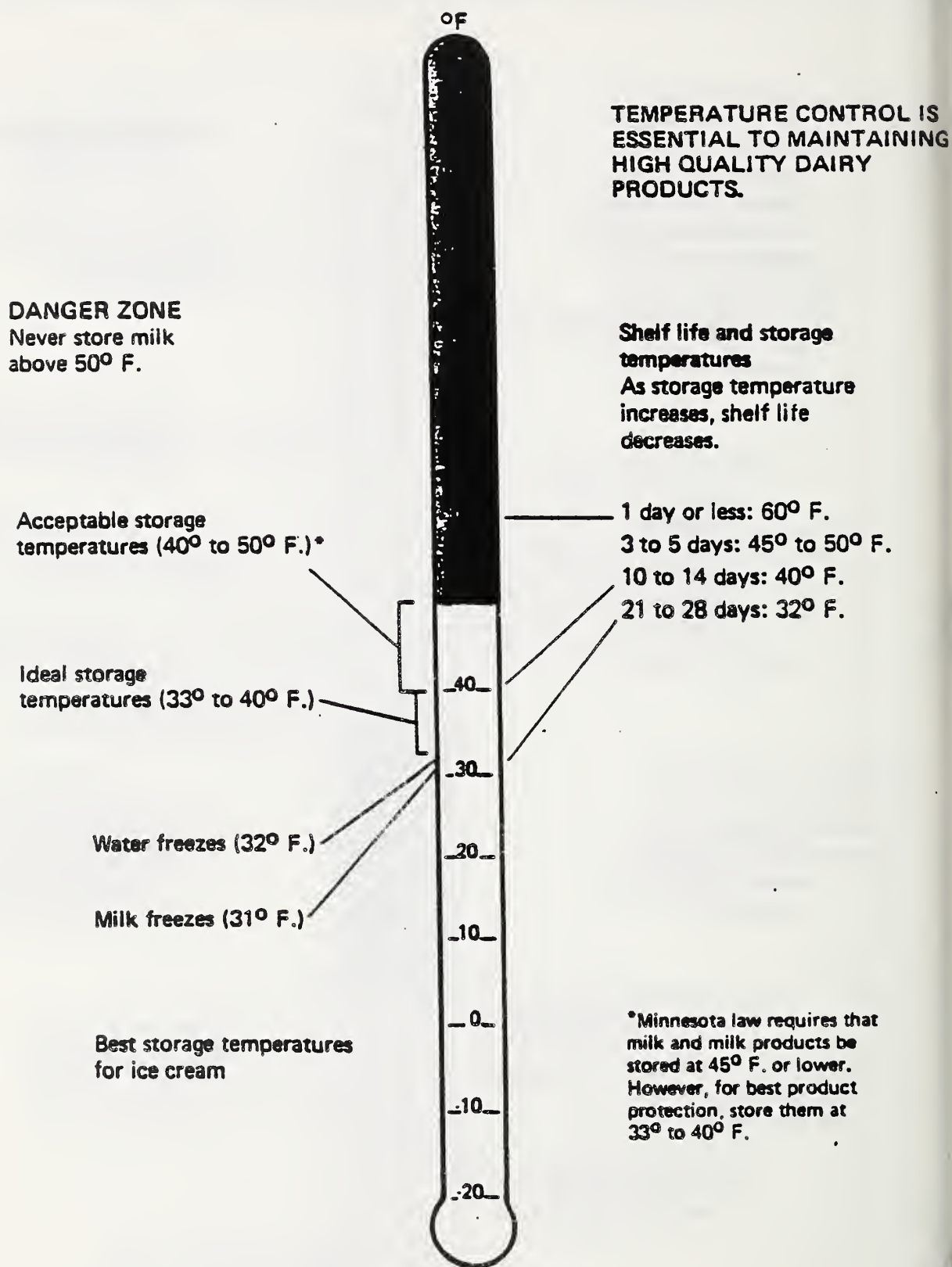
Temperature Guide for Safe Handling of Food in a Food Service Enterprise



Temperature Guide for Safe Storage and Use of Meat



Temperature Guide for Safe Handling of Milk



APPENDIX

THIS SECTION CONTAINS DOCUMENTS
WHICH CAN BE USED AS A BASIS FOR
REQUEST FOR PRICE PROPOSALS
FOR SOLICITING CONTRACTS FOR
ISSUING DONATED FOODS
TO SCHOOLS AND INSTITUTIONS
(PENNSYLVANIA - AN EXAMPLE)

DATE OF ISSUE _____, 19__

DATE DUE _____, 19__

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PREFACE

This is a Request for Price Proposals (RFP) for obtaining warehousing and/or delivery services for distributing donated foods. The documents contained herein, when modified, can be used as the primary basis for soliciting distribution services and as a basis for a letter of agreement with a chosen contractor.

Although this RFP is prepared specifically for obtaining warehousing and/or delivery services for distributing USDA donated foods to congregate feeding establishments it may be modified and used for obtaining similar services for distributing donated foods to issue sites for needy households.

I - GENERAL REQUIREMENTS

I. GENERAL REQUIREMENTS

About one-fifth of the foods consumed in schools throughout the United States is donated (free) by the U.S. Department of Agriculture. Donations are also made to various nutritional programs, charitable institutions and other agencies engaged in group feeding. Agencies nationwide receive about 50 million cases per year at a wholesale value of about \$1.5 billion. These quantities exclude donations made to needy households. Congregate feeding agencies in Pennsylvania currently receive about 1.6 million cases of donated foods, annually, with a wholesale value of approximately \$47 million.

Donated foods remain the property of the Federal government which tracks utilization to points of consumption. Various state authorities are appointed to act as agents for the Federal government in administering food issues to approved recipient agencies. In Pennsylvania,* the agency responsible for administering the donated foods program to schools, institutions, and other congregate feeding groups is the State Department of Agriculture.

For purposes of this RFP, the terms donated foods, items, products and issues (when used as a noun) have the same meaning. "Recipient Agencies" are qualified by the State as being eligible to receive donated foods. Types of recipient agencies providing food service are Schools, Charitable Institutions, Nutritional Programs for the Elderly, Summer Camps, Summer (Child) Feeding Programs and Child Care Programs. Types of recipient agencies providing food issues to needy households are the Emergency Food Assistance Program (EFAP or TEFAP), Commodity Supplemental Food Program and Food Distribution Program on Indian Reservations.

In soliciting the services of commercial firms to provide distributing service for issuing donated foods, the State is acting as agent for recipient agencies on one hand, and for the USDA, on the other.

Payments for issue services will be made monthly either by recipient agencies or the State, as may be determined.

Section V lists the various recipient agencies receiving donated foods from the State, the approximate quantities received by each and the frequency of issue.

Distribution Options

The State has several options in obtaining services for the distribution of donated foods as follows:

- (1) Contract with commercial firms (distributors) to warehouse and deliver (issue) donated foods with options as follows:
 - (a) Deliver to food prep sites;
 - (b) Deliver to school district (or other agency)-operated warehouses; or
 - (c) Issue foods across warehouse platforms for pickup by recipient agencies.

* When a word or phrase is underscored in this text, it means "Example"

- (2) Contract with a public warehouse to issue products accross the warehouse platforms only with recipient agencies arranging their own transportation for delivery.
- (3) Contract with trucking firms to deliver donated foods from arrival warehouses to recipient agencies at various sites:
 - (a) Food prep sites,
 - (b) Central pick-up points,
 - (c) School district (or other agency)-operated warehouses.

Items and Volume

Supplements A and B (Section VI) show the volume of foods received in Pennsylvania for use in food service operations. The USDA donates about 50-60 items per year, however, only about 20-30 of these are in the system at any one time. Items are classified into several groups as follows:

- | | |
|--------------------|--|
| <u>Group A</u> | This is the largest group of items. These foods are issued only to schools and other approved nutritional programs and are usually available only intermittently.* Examples are ground beef, canned peaches, frozen turkey, frozen chicken. |
| <u>Group B</u> | This group consists of several items which are also available to the same nutritional programs as identified in Group A, plus charitable institutions and summer camps. Group B items are usually available year round.* Examples all purpose flour, oil, shortening, peanut butter. |
| <u>Bonus Items</u> | This group consists of only a few Bonus (surplus removal) items which are available to all eligible agencies. Most Bonus items are identified by Group B codes, although some Group A items might be designated as "Bonus". Examples are cheese, butter, non-fat dry milk. |

* From time to time, deviations occur.

II - PRICE PROPOSALS

II. PRICE PROPOSAL

Price Proposals for the issue of donated foods in the manner described herein will be received at the location indicated below until _____, 19____. Although there will be a public opening of the proposals at the time indicated, State officials will study the price proposals received and select distributors within 10 working days of bid openings.

RETURN ONLY SHEET NO. 7 TO: (State fill in)

Any proposal will be considered which is received and stamped in the mailroom at the above address prior to the time and date stated above. If you choose not to submit a proposal, please return bid indicating "No Proposal." A list of successful bidders will be sent to all firms submitting proposals.

GENERAL AGREEMENT CONDITIONS

1. CORRECTION OF MISTAKES ON THIS FORM: Erasures or the use of typewriter correction fluid on forms is not acceptable and may result in rejection of the proposals. Prior to submission or opening, errors may be crossed out, corrections entered, and initialed by the person signing the proposal. No proposal shall be altered or amended after the specific submission time.
2. PURPOSE: The purpose of this Request for Price Proposal (RFP) is to select commercial firm(s) to serve as agent/s of the State for issuing USDA donated foods to recipient agencies.
3. AGREEMENT PERIOD: July 1, 1986 through August 31, 1987. Agreements may be extended for one year, to be mutually negotiated at a reasonable time, at least 90 days prior to the expiration date. The State reserves the right to sign agreements for more than one year, but in no event to exceed two years. The State reserves the right to reject any or all proposals.
4. QUANTITIES: See attached schedule, by regions. It shall be understood by all parties concerned that any agreement established as a result of this RFP will not obligate the State to a specific quantity. The quantities shown are annual estimates and may vary from year to year. However, the quantities shown are the results of actual historical tabulations.
5. PRICE: Proposals shall be in the form of a firm price per case for the agreement period.

6. ADDITIONS TO THE AGREEMENT: The right is reserved to add or delete recipients to this program during the term of the agreement. The bidder also agrees to provide service at the proposed bid price for any new recipient agency/ies within the agreement area, which may be approved to receive donated foods.
7. QUALIFICATIONS: A contractor must provide adequate facilities for storage and handling of foods, accommodate unusual surges in volume, and/or have an adequate truck fleet to handle predicted volumes of frozen, chilled, and dry foods, and meet standard sanitation requirements. The State reserves the right to examine bidders facilities and equipment to assure the above qualifications are met.

EMPLOYMENT: Contractors shall comply with all applicable Federal, State and local laws and regulations pertaining to wages, hours, and conditions of employment. In connection with contractor's performance of work under this agreement, the contractor agrees not to discriminate against any employee(s) or applicant(s) for employment because of age, race, religion, creed, sex, national region, or handicap.
9. ACCEPTANCE OF PROPOSAL CONTENT: The contents of the proposal of the successful bidder/s will become contractual obligations if acquisition action ensues. Failure of successful bidder/s to accept these obligations in a purchase agreement, purchase order, delivery order or similar acquisition instrument may result in cancellation of the award and such vendor may be removed from future solicitations.

SPECIAL AGREEMENT CONDITIONS

1. THIS INVITATION IS SUBJECT TO ALL OF THE PROVISIONS OF FEDERAL AND STATE STATUTES, AND ANY REVISIONS THERETO.
2. CONTRACTORS PROVIDING SERVICES TO RECIPIENT AGENCIES UNDER THIS RFP ASSURE THE STATE THAT THEY ARE CONFORMING TO THE PROVISIONS OF THE CIVIL RIGHTS ACT OF 1964, AS WELL AS THE STATUTES OF THE STATE'S FAIR EMPLOYMENT ACT, INCLUDING AMENDMENTS.
3. STATE SALES AND USE TAX CERTIFICATE OF EXEMPTION WILL BE ISSUED UPON REQUEST.
4. ISSUES AGAINST THIS PROPOSAL MUST BE FREE OF EXCISE OR TRANSPORTATION TAXES. EXCISE TAX EXEMPTION REGISTRATION NUMBERS MAY BE OBTAINED AND USED WHEN REQUIRED.
5. CASH DISCOUNTS MAY BE OFFERED BUT WILL NOT BE CONSIDERED IN DETERMINING LOW OFFER.
6. IN THE CASE OF DEFAULT BY THE SUCCESSFUL BIDDER/S, OR FAILURE TO DELIVER THE SERVICES ORDERED BY THE TIME SPECIFIED, THE STATE, AFTER DUE NOTICE IN WRITING, MAY PROCURE THEM FROM OTHER SOURCES AND HOLD CONTRACTOR/S RESPONSIBLE FOR ANY EXCESS COST OCCASIONED THEREBY.

7. BY MY SIGNATURE ON THIS PROPOSAL, I CERTIFY THAT THIS PROPOSAL IS MADE WITHOUT PRIOR UNDERSTANDING, AGREEMENT, OR CONNECTION WITH ANY CORPORATION, FIRM, OR PERSON SUBMITTING A PROPOSAL FOR THE SAME SERVICE, AND IS IN ALL RESPECTS FAIR AND WITHOUT COLLUSION OR FRAUD. I UNDERSTAND COLLUSION IS A VIOLATION OF THE FEDERAL LAW AND CAN RESULT IN FINES, PRISON SENTENCES, AND CIVIL DAMAGE AWARDS. I AGREE TO ABIDE BY ALL CONDITIONS OF THIS PROPOSAL AND CERTIFY THAT I AM AUTHORIZED TO SIGN FOR THE BIDDER/S.
8. THIS AGREEMENT SHALL BE GOVERNED IN ALL RESPECTS, WHETHER AS TO VALIDITY, CONSTRUCTION, CAPACITY, PERFORMANCE, OR OTHERWISE BY THE LAWS OF THE STATE.
9. EACH CONTRACTOR AGREES TO RETAIN ALL BOOKS, RECORDS, AND OTHER DOCUMENTS RELATIVE TO THIS AGREEMENT FOR THREE (3) YEARS FROM THE CLOSE OF THE FEDERAL FISCAL YEAR TO WHICH THEY PERTAIN. IF AN INCOMPLETE AUDIT IS INVOLVED, RECORDS SHALL BE RETAINED FOR WHATEVER PERIOD MAY BE NECESSARY TO RESOLVE OUTSTANDING ISSUES.
10. MODIFICATIONS, ADDITIONS, OR CHANGES TO THE TERMS AND CONDITIONS OF THIS RFP MAY BE A CAUSE FOR REJECTION OF YOUR OFFER, ALTHOUGH ANY REASONABLE OFFER MADE BY RESPONSIBLE CONTRACTORS WILL BE CONSIDERED.

OFFER SCHEDULE
(Please Use Ink)

For: Services for the Issue
of USDA Donated Foods

Due: (State fill in)

Invoice to each recipient agency/ies
or to the State as required by State
Officials.

F.O.B.
Issue Points

Bidders: (Please fill in name and address)

Telephone Number:

QUOTATION (Prices Per Case)

As shown in the Section VI - Recipient Agency Data attached hereto, donated foods may be issued at 3 different types of sites as listed below. A bidder should study the data submitted and enter a price per case for serving one or more types of sites, keeping in mind that there is a 10-case minimum per issue. Bid prices should be all inclusive. State officials will review the bids when received and select the prices or combination of prices most favorable to recipient agencies.

ENTER PRICE PER CASE AT EACH APPLICABLE ISSUE SITE

<u>Region No.</u>	<u>Food Preparation Sites</u>	<u>School District Warehouses</u>	<u>Pickup at Warehouse^{1/}</u>
I	_____	_____	_____
II	_____	_____	_____
III	_____	_____	_____
IV	_____	_____	_____
V	_____	_____	_____
VI	_____	_____	_____
VII	_____	_____	_____
VIII	_____	_____	_____

^{1/} Recipient agency must load vehicle.

In compliance with the above invitation and subject to all conditions imposed, the undersigned offers, and agrees, to furnish the services according to the terms set forth herein.

OFFERS MUST BE SIGNED
IN INK BY AN INDIVIDUAL
AUTHORIZED TO LEGALLY
BIND THE BIDDER

Fed. I.D. No. _____

Firm Name _____

By _____
(Signature)

Bidder/s may return this Sheet only.

Underscore = Example

III - WAREHOUSING REQUIREMENTS

III. WAREHOUSE REQUIREMENTS

A. SCOPE

The purpose of this Request for Price Proposal (RFP) is to select commercial firms to serve as agent of the State for issuing USDA donated foods to recipient agencies. This RFP is directed toward firms which currently have adequate facilities and equipment to handle additional volumes of foods including groceries, frozen foods and chilled items.

The State reserves the right to accept the bids which seem to be in the best interest of the State and recipient agencies regardless of price. The State reserves the right to reject any or all offers.

B. BASIC REQUIREMENTS

1. Time Frame

Issue services will begin on or about July 1, 1986 and extend through August 31, 1987,* or such other date as the parties may agree upon, but in no event to extend beyond August 31, 1988.

2. Items

Recipient agencies in the State currently receive about 56 items of donated foods. These 56 items may be categorized according to warehouse requirements as follows: (See Supplement A & B for Lists of Items).** Items and quantities may vary from year to year.

	<u>No. of Items</u>	<u>% of Volume</u>
- Dry	35	50.3
- Frozen	15	36.1
- Chilled	<u>6</u>	<u>13.6</u>
Total	56	100

3. Facility Requirements

Contractors must have adequate warehouse facilities for the following:

- Dry groceries - Ventilated space
- Frozen foods - 0°F or below
- Chilled items - Normally 36° F (32°F to 48°F depending on the item).

* The purpose of this overlapping is to favor the continuity of serving summer programs.

** A contractor can expect a normal inventory level of about 25 items, with surges to 35 items.

The amount of warehouse space required will vary from one region to another. (See Section III, Paragraph 1 Volume - Inventory Ratio.)

4. Sanitation Requirements

Warehouses may be routinely inspected by State officials. Warehouse facilities and practices must be continuously in compliance with the United States Food, Drug and Cosmetic Act and State Food Laws. Warehouses storing or trucks delivering USDA donated foods may be inspected for sanitation from time to time either by USDA or State health (designated) authorities.

C. INBOUND SHIPMENTS

1. Schedules

Inbound shipments originate from various States and are scheduled for shipment as follows:

- (a) Most items are scheduled for shipment quarterly, therefore, contractors will know well in advance the types and quantities of food to be received.
- (b) Some volatile price items such as chicken and beef are purchased on short notice, therefore, knowledge of shipments might be limited to a shorter lead time of three to four weeks.
- (c) Items in plentiful supply, such as butter, cheese and nonfat dry milk may be inventoried in a contractor's warehouse on a continuing basis. Inventory levels will be maintained at not less than three weeks nor more than eight weeks.

Officials of the State will notify contractors of expected shipping periods on Form FD-5 (See Supplement C). All shippers (suppliers) are advised to instruct truckers to prearrange unloading appointments directly with contractors.

Most inbound freight can be requested to arrive either by rail or truck at the request of a contractor. However, a contractor should plan on at least 20 percent of the volume to arrive by rail or piggyback. Shipments arriving by rail will arrive either at the contractor's warehouse or a nearby railroad siding as designated by the contractor. When shipments are made by piggyback at the discretion of the USDA, it is the responsibility of the contractor to either unload the allotted "pig" in the allotted time or pay a nominal fee for a holdover.

Although State officials can request shipments to arrive either palletized or slip-sheeted, truckers are instructed to tailgate the product on a contractor's pallet. Rail (and piggyback) shipments must be unloaded at a contractor's expense.

State officials will forward to contractors, copies of USDA Form KC-269-A (See Supplement D) as soon as available. This form indicates the name and address of the vendor. Contractors may call vendors to arrange for palletizing, slip-sheeting, and to communicate methods of shipments or arrival dates.

2. Freight Charges

All donated foods will be shipped prepaid, i.e., product and freight.

However, the State may elect to request and pay for additional drops on inbound shipments. In which case the contractors shall cooperate with the State in making suitable arrangement with shippers and/or other receivers.

Moreover, the State may wish to transfer merchandise from one contractor's warehouse to another to balance out receipts. Transfers between contractors shall be made on exchangeable pallets (straight or mixed items).

Each contractor shall include in his price a maximum of four outbound transfers to another contractor's warehouse without additional charge.

3. Receiving Procedures

- (a) Inspect load for condition on arrival and verify accuracy of count.
- (b) Execute form FD-6A (See Supplement E) and forward immediately (within 24 hours) to State officials along with a copy of the Bill of Lading.
- (c) If merchandise is damaged or otherwise not acceptable, notify the trucker or railroad in the usual manner and execute FNS Form 57 (See Supplement F) and forward to the State along with Form FD-6A (See Supplement E) and the Bill of Lading.

Notify State officials promptly by telephone for disposition and reallocation of product.

Recoup damaged merchandise so that all foods suitable for human consumption are salvaged for program use.

- (d) Contractors are also responsible for the following:

Assume all freight demurrage and detention charges.

Brace or level stop-off shipments for further movement.

Have sufficient warehouse space to absorb all inbound freight at abnormal peak loads at no additional cost to State or recipient agencies.

Rotate all stock on first in, first out basis in accord with acceptable warehousing practices. Provide evidence of stock rotation upon request.

Contractors are liable for claims levied by the USDA as a result of contractors' failure to properly secure, handle, protect or account for shipment.

D. OUTBOUND ISSUES

1. Issue Sites

A contractor shall act as an agent for the State in issuing donated foods either at food preparation sites, school-operated warehouses or across warehouse platforms.*

Orders will be submitted by recipient agencies indicating each drop site. Order forms will have contractor's item numbers, issue site numbers, and "Bill to" numbers. Recipient agencies must complete order forms FD-3-A (See Supplement G) and submit to the contractor to arrive two days in advance of shipment or pick-up.

* When the terms "school" is used it also implies other agencies.

2. Issue Time

Issues shall be made on a regularly pre-scheduled day of the week as determined by a contractor, between the hours of 6:30 AM and 4:00 PM or as may be otherwise mutually arranged. Recipient agencies shall be notified of scheduled days and times of issue. Notice of changes in issue schedules must be submitted to recipient agencies two weeks in advance of implementation.

3. Issue Frequency

Products must be issued by the contractor weekly, skip-a-week, monthly or less often, provided that a 10-case minimum total order is submitted.

4. Special Issues

Special or intermediate issues will be required only if a contractor initially fails to deliver a product in stock, in which case the contractor shall issue a product within 24 hours if so requested by the recipient agency, provided a proper form FD-3A (See Supplement G) has been executed. No extra charges will be assessed.

E. LIAISON

1. With State Officials

State officials shall establish a liaison with contractors with respect to:

- (a) Inventory levels of Group B and Bonus items. It will be necessary to establish a mutually agreeable days/s of the month when designated State and contractor representatives will review the inventory levels of these items and discuss schedules of inbound shipments.
- (b) State officials shall notify contractors of expected arrival dates of Group A items by the use of Form FD-5 (See Supplement C) which is an allocation form.
- (c) State officials shall send copies of USDA Form KC-269-A (See Supplement D) to contractors regarding origins of shipments of all items as soon as received.

2. With School Districts and other Agencies

- (a) Contractors shall communicate only with recipient agency food service administrative staff, e.g. school district food service director.
- (b) State personnel will notify recipient agencies by telephone or mail of cyclical product (Group A) arrivals within five (5) days of arrival.
- (c) Contractors shall track issues of Group A and B items by school district or other recipient agency to prevent over-issuing to an agency.

F. ACCOUNTABILITY

A contractor shall be financially responsible for all merchandise released into his care. He shall be required to carry insurance on the products in his care, be responsible for shortages and damages and submit receiving, inventory and disposition reports as may be required.*

1. Insurance

Contractors shall provide "All Risk" escalating warehouse contents insurance with coverage equal to the cost value of the donated foods in a warehouse at any one time. See Supplement I (i).

2. Shortages and Damages

A contractor shall be financially responsible for shortages and damages to products or packages which make them unacceptable to the State.

Damages shall include infestation of product due to improper storage condition, as well as physical damage to containers including serious rust. Settlements on shortages and damages can be made in the form of replacement of a product with an equal quantity and quality.

* Extra care items which are susceptible to infestation may have to be held in "cooler" storage if holding periods are prolonged in warmer weather.

Should overage and shortage discrepancies occur between physical inventory and book inventory, such discrepancies shall be reconciled annually. Irreconcilable overages and shortages will be settled by computing the value of such shortages and overages based on "wholesale cost" as established by State officials. If the value of shortages exceeds the value of overages, a monetary, or in kind, settlement for the difference in value will be required. If the value of overages exceeds the value of shortages, no monetary settlement is required. Book inventory will be adjusted after settlement to correspond with physical inventory.

3. Reports

Receiving: All documents, including Bill/s of Lading related to the receiving of items at warehouses, shall be forwarded to the appropriate State office immediately upon unloading and verification of receipts.

Inventory: The program is based on a normal throughput not to exceed two months. If a school district does not order its allocation of Group A items on a 60-day period, a contractor must notify school district officials.

To accommodate school district officials who wish to hold Group A foods over 60 days from receipt, a contractor may assess an extra charge not to exceed \$0.35 per case, for each month or fraction thereof holdover.

If a school district chooses not to utilize all of an allotment, the contractor must notify State officials who will reallocate the merchandise.

Each contractor shall maintain perpetual inventory of USDA donated foods, or otherwise be prepared to provide the State with an inventory within two (2) hours in the event of an emergency. Moreover, a distributor shall be prepared to provide the State with monthly inventory reports on Bonus items on a regular scheduled basis. Inventory reports may be required on all items monthly or quarterly, as well as annually, at the discretion of the State.

Group A and B items (except Bonus) will be allocated by State officials to recipient agencies prior to arrival of merchandise in accord with allocation Form FD-5 (See Supplement C). Thus, these items are carried by contractors in the accounts of recipient agencies who are responsible for all issue charges.

Bonus items shall be held in inventory in the account of the USDA with the State acting as the USDA's agent.

Contractors shall provide the State with an inventory report by items and agencies as of March 31 and subsequent inventory reports by items and agencies as may be required through May 30. The purpose of these reports is to enable State officials to "push" the utilization or reassignment of unused items at the close of the school year.

Utilization: Contractors shall provide the State with an end-of-the-year (State Fiscal) utilization accountability report by recipient agencies and the items, showing the total amounts received of each item, the disposition thereof by recipient agencies, and the residual or shortage amounts.

4. Records and Reviews

A contractor shall maintain records fully accounting for receipt and disposition of all USDA donated foods. Such records must be maintained for three (3) years following the close of the Federal fiscal year to which they pertain and must be available for review at any reasonable time upon request of either the USDA or State officials.

A contractor's facilities, equipment, and procedures shall be subject to review by State and Federal authorities at any reasonable time and place. Any serious deviation from standard acceptable practices such as poor sanitation, product damage, improper storage temperatures and inadequate accounting may be cause for cancellation of the contract after due notice.

G. FINANCIAL

1. Charges (Prices)

Financial proposals from bidders shall be quoted on a one price per case basis in strict accord with this Request for Proposal. The single stated fee per case shall apply to dry, chilled and frozen in accord with the types of issue sites. Fees stated are all inclusive and no other charges shall be assessed.

Contractors may charge recipient agencies an additional fee not to exceed \$0.35 per case for any Group A or B (non-inventory) items only which remain in a contractor's warehouse for over 60 days. The \$0.35 shall apply for each month or a fraction thereof. The 60-day limit shall be extended 15 days (to 75 days) prior to school start-up and at Christmas shutdown.

2. Payments

Contractors may submit invoices (statements) monthly on mutually agreed upon dates to designated recipient agencies. Each invoice shall include a summary of issue tickets for the period. Each referenced ticket shall be listed in numerical sequence and show the total number of cases, bags, etc. issued. In the event a recipient agency falls more than 60 days in arrears in payments, State officials and a contractor may jointly agree to suspend issue.

H. VOLUME - INVENTORY RATIO

Contractors with volumes of 15,000 cases per month or under can expect to have inventory turns every six to seven weeks. The greater the volume, the more rapid the turn. Contractors with volumes over 15,000 cases per month can expect to have inventory turns of 4-5 weeks depending on the volume.

I. SELF-SERVICE AGENCIES (Direct Shipment Receivers)

Large agencies which receive inbound shipments directly from USDA points of origin to agency-operated warehouses or other issue facilities are labeled "Self-Service Contractors". These agencies shall conform to the same guidelines as required for commercial contractors.

J. TERMINATION

Agreements may be terminated by either party at any time, on 90 days' prior written notice. This agreement may be terminated by the State for poor performance on 10 days' notice. Contractors shall be completely responsible for the cost of transferring residual merchandise to other points in the event of agreement termination or cancellation.

IV - DELIVERY REQUIREMENTS

IV.

A.

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B.

IV. DELIVERY REQUIREMENTS

A. SCOPE

Prices for delivery service may be quoted separately or in conjunction with warehousing services. If quoted separately, quote separate prices for:

- (a) Delivery to food prep sites, or
- (b) Delivery lump sum to school (or agency) operated warehouses

B. BASIC REQUIREMENTS

1. Issue services will begin on or about July 1, 1986 and extend through August 31, 1987,* or such other date as the parties may agree upon, but in no event to extend beyond August 31, 1988.

2. Items

Recipient agencies in the State currently receive about 56 items of donated foods. These 56 items may be categorized according to warehouse requirements as follows : (See Supplement A & B for Lists of Items).** Items and quantities may vary from year to year.

	<u>No. of Items</u>	<u>% of Volume</u>
- Dry	35	50.3
- Frozen	15	36.1
- Chilled	6	13.6
Total	56	100

3. Delivery Vehicle Requirements***

Contractors must have adequate vehicles as follows:

- (a) Van trucks for dry groceries and refrigerated trucks or insulated containers for refrigerated items;
- (b) Dual compartment trucks for combined handling of dry and refrigerated items, or

* The purpose of this overlapping is to favor the continuity of serving summer programs.

** A contractor can expect a normal inventory level of about 25 items, with surges to 35 items.

*** Temperature of frozen and chilled foods while being transported shall be in accord weith the AFDOS Code as recommended by the Federal Food and Drug Administration.

(c) Single compartment refrigerated trucks (0°F) for separate or integrated loads of dry groceries and refrigerated items.

The number of vehicles required will depend on the size of the trucks and the number of delivery routes; and may vary from one region to another.

4. Licenses

For those contractors required by State statutes to have a license to operate, the responsibility for acquiring such a license, prior to contract signing, rests with the contractor.

C. OUTBOUND DELIVERIES

1. Delivery Sites

A contractor shall act as an agent for the State in issuing donated foods either at food preparation sites or school-operated warehouses.

A school district or other recipient agency may elect, prior to the school year, to have foods delivered either to a self-operated warehouse or to food preparation sites (or be picked up at a contractor's warehouse). This decision cannot be reversed for the duration of the agreement unless mutually agreed upon by the contractor.

Based on delivery to either a school-operated warehouse or to food preparation sites, contractors must deliver weekly provided there is a 10-case minimum order of donated foods and he is also delivering commercial foods weekly.

If a contractor is not delivering commercial supplies to a school-operated warehouse or to food preparation sites, he may deliver on a skip-a-week basis, provided that the school district or other recipient agency concurs in this arrangement.

Recipient agencies which are entitled to less than 10 cases per drop site may receive deliveries monthly, at the regular charge per case, even though the 10-case minimum is not met.

Some recipient agencies may choose to pick up their donated food directly from a contractor's warehouse. The price quoted per case will apply to these agencies, as will the 10-case minimum.

Orders will be submitted by recipient agencies indicating each drop site. Order forms will have a contractor's item numbers, issue site numbers and "Bill to" numbers. Recipient agencies must complete order forms FD-3 (Supplement G) and submit to the contractor to arrive two days in advance of shipment or pick-up.

2. Delivery Frequency and Time

Deliveries at food preparation sites shall be made on a regularly pre-scheduled day of the week, as determined by a contractor, between the hours of 6:30 AM and 3:00 PM or as may be otherwise mutually arranged. Recipient agencies shall be notified of scheduled days of delivery. Notice of

changes in delivery schedules must be submitted to recipient agencies two weeks in advance of implementation.

3. Special Deliveries

Special or intermediate deliveries shall be required only if a contractor initially fails to deliver a product in stock, in which case the contractor shall make delivery within 24 hours if so requested by the recipient agency, provided a proper form FD-3A (Supplement G) has been executed. No extra charges will be assessed.

4. Delivery Drop Areas

Drivers and helpers shall deliver merchandise in designated staging areas. Recognized designated staging areas at food preparation sites are inside of the door of a walk-in dry grocery area, freezer or cooler. Drivers and helpers shall not be required to stow merchandise on shelves nor stack in reach-in coolers, freezers or other cabinets.

Recognized drop areas at recipient agency warehouses are across the receiving platform or first receiving area.

Drivers and helpers shall request an authorized receiver or designated representative, to verify accuracy of items, quantities of each item, total quantities, and condition of merchandise. Each delivery ticket must be receipted (signed) by the recipient agency. Variations from the norm, i.e., shortages, damages, etc., shall be noted on each ticket by the recipient agency, and initialed by both the truck driver and recipient agency.

5. Straight or Mixed Loads

Contractors may load donated foods in straight vans containing donated foods only or in mixed vans with food commercially purchased, as long as other terms of the agreement are satisfied. Donated food may not be stored or loaded with agricultural or other chemicals which may be harmful to the quality or safety of the donated food.

D. ACCOUNTABILITY

A contractor shall be financially responsible for all merchandise released into his care. He shall be required to carry insurance on the products in his care, be responsible for shortages and damages and submit disposition reports as may be required.

1. Insurance

Contractors shall provide "All Risk" vehicle contents insurance with coverage equal to the cost value of the donated foods on a load at any one time.

2. Shortages and Damages

A contractor shall be financially responsible for shortages and damages to products or packages which make them unacceptable to the State.

Damages shall include physical damage to containers. Settlements on shortages and damages can be made in the form of replacement of a product with an equal quantity and quality.

3. Reports

Delivery contractors shall provide the State with an end-of-the-year (State Fiscal) utilization accountability report by recipient agencies and items, showing the total amounts delivered of each item, to each recipient agency.

4. Records and Reviews

A contractor shall maintain records fully accounting for receipt and disposition of all USDA donated foods. Such records must be maintained for three (3) years following the close of the Federal fiscal year to which they pertain and must be available for review at any reasonable time upon request of either the USDA or State officials.

A contractor's facilities, equipment, and procedures shall be subject to review by State and Federal authorities at any reasonable time and place. Any serious deviation from standard acceptable practices such as poor sanitation, product damage, improper temperatures and inadequate accounting may be cause for cancellation of the contract after due notice.

E. FINANCIAL

Financial proposals from bidders shall be quoted on a one price per case basis in strict accord with this Request for Proposal. The single stated fee per case shall apply to dry, chilled and frozen in accord with the types of issue sites. Fees stated are all inclusive and no other charges shall be assessed.

2. Payments

Contractors may submit invoices (statements) monthly on mutually agreed upon dates to designated recipient agencies. Each invoice shall include a summary of issue tickets for the period. Each referenced ticket shall be listed in numerical sequence and show the total number of cases, bags, etc., issued. In the event a recipient agency falls more than 60 days in arrears in payments, State officials and a contractor may jointly agree to suspend issues.

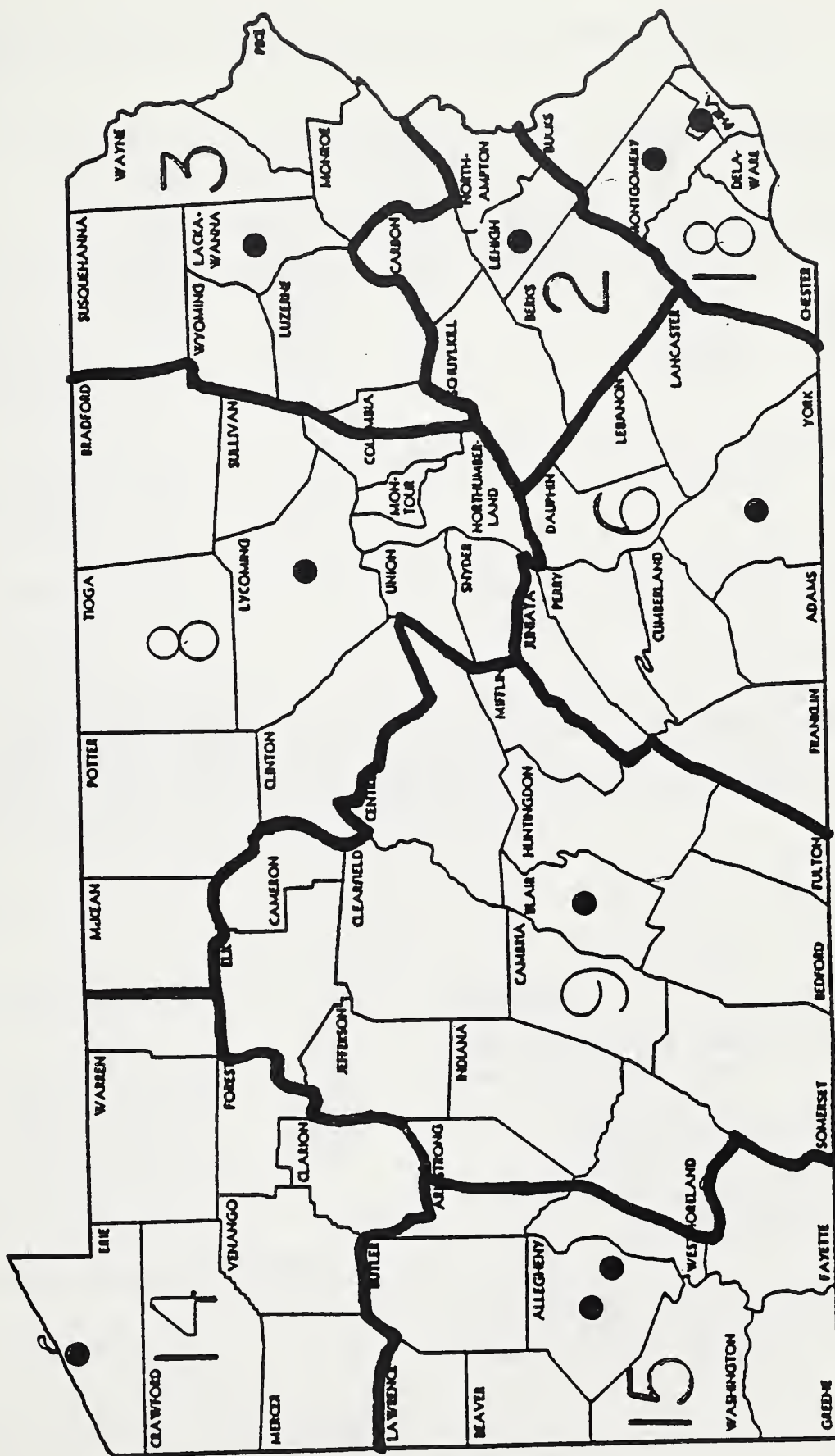
F. TERMINATION

Agreements with contractors may be terminated by either party at any time, on 90 days' prior written notice. This agreement may be terminated by the State for poor performance on 10 days' notice.

V - RECIPIENT AGENCY DATA

Data similar to the following
examples are essential for
intelligent bidding by
potential contractors.

EXISTING DISTRIBUTION AREAS (REGIONS) FOR DONATED
FOODS ARRIVING IN PENNSYLVANIA FOR CONGREGATE
FEEDING PROGRAMS



Approximate location of warehouse(s) serving area

SUMMARY OF PROJECTED ISSUE SCHEDULE BY COUNTIES (AVERAGE)
REGION 2

County 1	Stops per Week 2	Cases per Month 3	Cases per FP* Site per Week 4	No. of Whses 5	Cases to Warehouses	
					Total per Month 6	per week/ Whses 7
Berks	56	3,334	15	6	1,872	78
Carbon	19	769	13	-	--	--
Lehigh	42	2,691	16	3	1,565	130
Northampton	29	1,497	12	7	1,955	70
Schuylkill	24	1,508	16	5	1,281	64
<hr/>						
TOTAL/AVERAGE	166	9,799	15	21	6,673	79
Col. 3 & 6	--	16,472	--	--	--	--

* - Food Preparation

Col. 3 Cases per month based on normal peak load September through March.

Excludes cases which may be shipped to agency warehouses either directly or through distributors.

SUMMARY

Food Prep Sites

Stops per week 166
Av. Cases per Stop 15
Av. Cases per Week 2,450
Av. Cases per Day 490
Av. Stops per Day 33
Trucks required @ 15
Stops per Day 2.2

Including Warehouse Sites

Av. Cases per Day @
1 Stop Per Day 79

Add cases F.P Sites
per Truck 490

Av.-Total Cases 569

Options

Two (2) trucks each of 5 days
per week @ 16 stops:

To food prep. sites 245 cases
One warehouse stop 79 cases
Total..... 324 cases
Delivered after 4 stops
at 20 cases..... 100 cases
Total load of truck..... 424 cases

Or 5 trucks two days per week
or 10 trucks one day per week
Same load per truck

PROJECTED ISSUE SCHEDULE - REGION 2

Preliminary (Totals to
be Revised)

AGENCY	No. of FP Sites	Average Number of Cases Issued				Food Prep Sites	
		Agency Monthly	FP Sites Weekly	Whse Weekly	Skip-a Week	Mon- thly	Quar- terly
1	2	3	4	5	6	7	8

BERKS COUNTY

9 MONTH PROGRAMS

Public Schools

Antietam	2	65	8*	---	---	---	---
Boyetown	10	513	13	---	---	---	---
Conrad Weiser	2	188	23	---	---	---	---
Daniel Boone	2	210	26	---	---	---	---
Exeter Township	5	226	11	---	---	---	---
Fleetwood	5	134	[7]	---	14	---	---
Governor Mifflin	(5)	(319)	(16)	80	---	---	---
Brandywine Heights	5	156	8*	---	---	---	---
Hamburg	1	240	60	---	---	---	---
**Kutztown	6	146	[6]	---	12	---	---
Muhlenberg	4	219	14	---	---	---	---
Oley Valley	3	169	14	---	---	---	---
Reading	(1)	(845)	(211)	211	---	---	---
Schuylkill Valley	1	117	29	---	---	---	---
Tulpehocken	(4)	(173)	(11)	43	---	---	---
Twin Valley	3	187	16	---	---	---	---
Wilson	4	297	19	---	---	---	---
Wyomissing	2	93	12	---	---	---	---
Private Schools	--	--	--	--	--	--	--
Bethany Children's	1	5	[1]	---	---	---	15
Children's H Readin	1	3	[1]	---	---	---	9
Lutheran Ho Topton	1	1	0	---	---	---	3
St Peter Sch Cafete	1	22	[6]	---	12	---	---
**Teen Challenge Tng	1	16	[4]	---	---	16	---
St Catherine Siena	1	34	8*	---	---	---	---
Hamburg Center	1	3	[1]	---	---	---	9

12 MONTH PROGRAMS

Institutions

Wernersville S Hosp	(1)	(218)	(55)	55	---	---	---
Hamburg Center	1	144	36	---	---	---	---
Berks Co Home	(1)	(211)	(53)	53	---	---	---
Lutheran Ho Topton	1	28	[7]	---	14	---	---
Berks Co Prison	(1)	(106)	(26)	26	---	---	---
Reading Hos&Med Ctr	1	9	[2]	---	---	9	---
Teen Challenge Tng	1	50	13	---	---	---	---
Hope Rescue Mission	1	18	[4]	---	---	18	---
St Joseph Villa	1	18	[4]	---	---	18	---
Berks Co Detention	1	3	[1]	---	---	---	9
Reading Rehab Hosp	1	3	[1]	---	---	---	9

PROJECTED ISSUE SCHEDULE - REGION 2

=====

AGENCY	No. of FP Sites	Average Number of Cases Issued					
		Agency Monthly	FP Sites Weekly	Whse Weekly	Skip-a Week	Food Prep Sites Mon- thly	Quar- terly
1	2	3	4	5	6	7	8

=====

BERKS COUNTY, Continued

12 MONTH PROGRAMS

Nutrition Program for the Elderly

Berks Co Area AoA	1	18	[4]	---	---	18	---
-------------------	---	----	-----	-----	-----	----	-----

=====

TOTAL/AVERAGE	71	3,334	12				
STOPS PER WEEK	25						

=====

3 MONTH PROGRAMS

Summer Camps	8	18	0	---	---	---	7
Summer Feeding	1	23	[6]	---	12	---	---

Footnotes

1 - School Districts listed by school districts, others by agency.

2 - FP - Food Preparation.

3 - Column 3. Volume represents normal peak months - Sept. - March.

() - Not included in total.

[] - For information only.

* - Marginal (i.e., 10 cases minimum per drop.)

(a) - Insufficient data.

(b) - Includes Warehouse Drop site for overflow.

Summer Camps and Summer Feeding Program excluded from total.

** - Indicates questionnaire not returned.

PROJECTED ISSUE SCHEDULE - REGION 2

=====							
AGENCY	No. of FP Sites	Average Number of Cases Issued			Food Prep Sites		
		Agency Monthly	FP Sites Weekly	Whse Weekly	Skip-a Week	Mon- thly	Quar- terly
	2	3	4	5	6	7	8
=====							
CARBON COUNTY							
9 MONTH PROGRAMS							
Public Schools							
**Jim Thorpe	3	91	8*	---	---	---	---
Leighton	4	254	16	---	---	---	---
Palmerton	2	142	18	---	---	---	---
Panther Valley	3	115	10	---	---	---	---
Weatherly	1	44	11	---	---	---	---
Private Schools	--	--	--	--	--	--	--
**Youth Forestry Camp	1	7	[2]	---	---	---	21
12 MONTH PROGRAMS							
Institutions							
Carbon Co Home	1	73	18	---	---	---	---
Gnaden Heutten Hosp	1	11	[3]	---	---	11	---
Carbon Co Prison	1	13	[3]	---	---	13	---
Nutrition Program for the Elderly							
Carbon Co AoA	1	18	[4]	---	---	18	---
=====							
TOTAL/AVERAGE	18	769	11				
STOPS PER WEEK	7						
=====							
3 MONTH PROGRAMS							
Summer Camps	3	7	0	---	---	---	7

PROJECTED ISSUE SCHEDULE - REGION 2

AGENCY	No. of FP Sites	Average Number of Cases Issued					
		Agency Monthly	FP Sites Weekly	Whse Weekly	Skip-a Week	Food Prep Sites Mon- thly	Quar- terly
1	2	3	4	5	6	7	8

LEHIGH COUNTY

9 MONTH PROGRAMS

Public Schools

Allentown	(9)	(1234)	(309)	309	---	---	---
Catasauqua	3	205	17	---	---	---	---
East Penn	5	470	23	---	---	---	---
Northern Lehigh	5	256	13	---	---	---	---
Northwestern Lehigh	2	168	21	---	---	---	---
Parkland	10	488	12	---	---	---	---
Salisbury Township	3	157	13	---	---	---	---
Southern Lehigh	5	257	13	---	---	---	---
Whitehall-Coplay	1	336	84	---	---	---	---
Private Schools	--	--	--	--	--	--	--
Allentown St Hosp	1	15	[4]	---	---	15	---
Jewish Day School	1	15	[4]	---	---	15	---
St Ann Sch Cafeteri	1	15	[4]	---	---	15	---
Wiley House	1	42	10	---	---	---	---
Valley Youth House	1	1	0	---	---	---	3

Child Care

Wiley House	1	37	9*	---	---	---	---
Vol America Chil Ct	1	37	9*	---	---	---	---

12 MONTH PROGRAMS

Institutions

Allentown Hosp Asso	1	10	[2]	---	---	10	---
Cedarbrook Co Home	(1)	(227)	(57)	57	---	---	---
Good Shepherd Home	1	48	12	---	---	---	---
Sacred Heart Hosp	1	6	[2]	---	---	---	18
Phoebe Devitt Home	1	69	17	---	---	---	---
Allentown Rescue Mi	1	11	[3]	---	---	11	---
Lehigh Co Prison	(1)	(104)	(26)	26	---	---	---
Westminster Village	1	14	[3]	---	---	14	---
Lehigh Vly Drug&Alc	1	13	[3]	---	---	13	---
Halfway Ho Lehigh V	1	9	[2]	---	---	9	---
Turning Point Lehigh	1	9	[2]	---	---	9	---
Allentown Osteopathi	1	4	[1]	---	---	---	12

PROJECTED ISSUE SCHEDULE - REGION 2

=====

AGENCY	No. of FP Sites	Average Number of Cases Issued						Food Prep Sites	
		Agency	FP Sites	Whse	Skip-a	Mon-	Quar-	thly	terly
		Monthly	Weekly	Weekly	Week				
	2	3	4	5	6	7	8		
1									

=====

LEHIGH COUNTY, Continued

12 MONTH PROGRAMS

Nutrition Program for the Elderly

Lehigh Co AoA	1	18	[4]	---	---	18	---
---------------	---	----	-----	-----	-----	----	-----

=====

TOTAL/AVERAGE	52	2,691	13				
---------------	----	-------	----	--	--	--	--

STOPS PER WEEK	20						
----------------	----	--	--	--	--	--	--

=====

3 MONTH PROGRAMS

Summer Camps	6	14	0	---	---	---	7
Summer Feeding	1	23	[6]	---	12	---	---

PROJECTED ISSUE SCHEDULE - REGION 2

AGENCY	No. of FP Sites	Average Number of Cases Issued					
		Agency Monthly	FP Sites Weekly	Whse Weekly	Food Prep Sites		
					Skip-a Week	Mon- thly	Quar- terly
1	2	3	4	5	6	7	8

NORTHAMPTON COUNTY

9 MONTH PROGRAMS

Public Schools

**Bangor	5	262	13	---	---	---	---
Bethlehem	(1)	(829)	(207)	207	---	---	---
Bethlehem Vo-Tech	1	49	12	---	---	---	---
**Vo-Tech Eastern	1	50	13	---	---	---	---
**Easton	9	363	10	---	---	---	---
Nazareth	(2)	(236)	(30)	59	---	---	---
**Northampton	8	530	17	---	---	---	---
Pen Argyl	(3)	(141)	(12)	35	---	---	---
Saucon Valley	(4)	(190)	(12)	48	---	---	---
Wilson	(1)	(189)	(47)	47	---	---	---
Private Schools	--	--	--	--	--	--	--
Children's H Easton	1	7	[2]	---	---	---	21
Our Lady Hungary	1	33	8*	---	---	---	---
Sacred Heart School	1	13	[3]	---	---	13	---

12 MONTH PROGRAMS

Institutions

Cedarbrook Ftn Hill	1	72	18	---	---	---	---
Holy Family Manor	1	21	[5]	---	10	---	---
True Life Ministrie	1	2	0	---	---	---	6
Gracedale Co Northa	(1)	(277)	(69)	69	---	---	---
Easton Hospital	1	42	10	---	---	---	---
Bible Fellowship Ch	1	6	[2]	---	---	---	18
Northampton Co Pris	(1)	(93)	(23)	23	---	---	---
Slate Beld Med Ctr	1	12	[3]	---	---	12	---
Muhlenberg Med Ctr	1	6	[1]	---	---	---	18
Hogar Crea of PA In	1	12	[3]	---	---	12	---

Nutrition Program for the Elderly

Northampton Co AoA	1	18	[4]	---	---	18	---
--------------------	---	----	-----	-----	-----	----	-----

TOTAL/AVERAGE	36	1,497	10				
STOPS PER WEEK	17						

3 MONTH PROGRAMS

Summer Camps	2	5	0	---	---	---	7
Summer Feeding	1	23	[6]	---	12	---	---

PROJECTED ISSUE SCHEDULE - REGION 2

AGENCY	No. of FP Sites	Average Number of Cases Issued			Food Prep Sites		
		Agency Monthly	FP Sites Weekly	Whse Weekly	Skip-a Week	Mon- thly	Quar- terly
1	2	3	4	5	6	7	8

SCHUYLKILL COUNTY

9 MONTH PROGRAMS

Public Schools

Blue Mountain	(4)	(285)	(18)	71	---	---	---
**Schuylkill In U 29	1	145	36	---	---	---	---
Marian High School	1	42	11	---	---	---	---
Mahoney	1	133	33	---	---	---	---
Minersville	1	114	28	---	---	---	---
North Schuylkill	5	241	12	---	---	---	---
Pine Grove	(30)	(223)	(19)	56	---	---	---
Pottsville	(3)	(361)	(30)	90	---	---	---
St Clair	2	56	[7]	---	14	---	---
Shenandoah Valley	1	80	20	---	---	---	---
Schuylkill Haven	2	105	13	---	---	---	---
Tamaqua	(5)	(275)	(14)	69	---	---	---
Tri-Valley	1	145	36	---	---	---	---
Williams Valley	4	139	9*	---	---	---	---

Private Schools

Annunciation St Geo	1	28	[7]	---	14	---	---
**Mahoney Cith Cath	1	16	[4]	---	---	16	---
St Casimir-St Stani	1	19	[5]	---	---	19	---
**St Francis of Assis	1	23	[6]	---	12	---	---
St Joseph Day Schoo	1	5	[1]	---	---	---	15
All Saints	1	34	9*	---	---	---	---
St Stephen School	1	20	[5]	---	10	---	---

12 MONTH PROGRAMS

Institutions

Ashland St Hospital	1	9	[2]	---	---	9	---
Rest Haven	(1)	(137)	(34)	34	---	---	---
Good Samaritan Hosp	1	3	[1]	---	---	---	9
Pottsville Hospital	1	10	[3]	---	---	10	---
Habilitation Inc	1	69	17	---	---	---	---
Coaldale St Gen Hos	1	33	8*	---	---	---	---
Pottsville Area Kit	1	20	[5]	---	10	---	---

PROJECTED ISSUE SCHEDULE - REGION 2

=====

AGENCY	No. of FP Sites	Average Number of Cases Issued					
					Food Prep Sites		
		Agency Monthly	FP Sites Weekly	Whse Weekly	Skip-a Week	Mon- thly	Quar- terly
1	2	3	4	5	6	7	8

=====

SCHUYLKILL COUNTY, Continued

12 MONTH PROGRAMS

Nutrition Program for the Elderly

Schuylkill Co Aoa	1	18	[4]	---	---	18	---
-------------------	---	----	-----	-----	-----	----	-----

=====

TOTAL/AVERAGE	33	1,508	11				
STOPS PER WEEK	20						

=====

3 MONTH PROGRAMS

Summer Camps	3	7	0	---	---	---	7
Summer Feeding	1	23	[6]	---	12	---	---

Similar information for other Regions

VI - SUPPLEMENTS

- LIST OF ITEMS AND FORMS

VI. SUPPLEMENTS - LIST OF ITEMS AND FORMS

- Supplement A Annual Volume of Various Donated Foods Arriving in Pennsylvania for Use in Food Service Operations
- Supplement B Packaging Dimensions and Cube Weight of USDA Donated Foods
- Supplement C Form FD - 5 Notice of Allocation of Donated Foods
- Supplement D KC-269-A Forwarding Notice
- Supplement E Form FD-6A Distributor's Receiving Report for Donated Foods
- Supplement F Form FNS-57 Report of Shipment Received Over, Short and/or Damaged
- Supplement G Form FD-3-A Donated Foods Order Forms for Recipient Agencies
- Supplement H FORM FD-6 School System Control Sheet for Scheduling Donated Foods For Delivery to Schools
- Supplement I Letter Confirming Insurance Coverage
- Supplement J Form for Evaluating Contractor's Capabilities
- Supplement K Example of Service Agreement (Contract)
- Supplement L Form for Surveying Recipient Agents for Delivery Options
- Supplement M Calender For Group "A" Donated Foods - SY 86-87

VOLUME OF VARIOUS DONATED FOODS ARRIVING IN PENNSYLVANIA FOR USE IN
FOOD SERVICE OPERATIONS¹

Code	Description	Pack/Size	Cases
<u>FROZEN</u>			
A070	Beans, Green	30# case	11,000
A580	Beef, Ground	55# carton	5,681
A582	Beef, Ground	55# carton	75,704
A590	Beef Patties	36# carton	78,750
A366	Blueberries, Wild	30# carton	26,680
B040	Butter, Print	32/1#	167,800
B050	Butter, Print	36/1#	1,067
A365	Cherries, Red Tart Pitted	30# can	18,750
A514	Chickens, Thighs/Drumsticks	40# carton	950
A516	Chickens, Cut-Up	40# carton	77,931
A526	Chicken Patties, Breaded	40# carton	19,950
A170	Potato, Rounds	6/5# case	14,300
A529	Turkeys, Whole	12#-24#	35,889
A536	Turkey Roasts	4/8#-12# per carton	7,600
A288	Vegetables, Mixed	30# case	30,200
----- TOTAL FROZEN (FOOD SERVICE OPERATIONS)			572,252

<u>CHILLED</u>			
A342	Apples, Fresh	40# case	17,456
B060	Cheese, Process	6/5# loaves	178,965
B065	Cheese, Cheddar	8/5# portions	9,396
B076	Cheese, Mozzarella	40# (various pounds)	7,000
A441	Pears, D'Anjou Fresh	45# carton	900
A257	Walnuts, English Pieces	30# carton	2,540
----- TOTAL CHILLED (FOOD SERVICE OPERATIONS)			216,257

<u>DRY</u>			
A350	Applesauce	6/#10 can	45,900
A360	Apricots	6/#10 can	2,200
A050	Beans, Green	6/#10 can	14,300
A080	Beans, Vegetarian	6/#10 can	46,200
A110	Corn, liquid	6/#10 can	15,396
B405	Honey, Processed	6/5# can	23,120
B406	Honey, Processed	5 gallon pail	500
B670	Oil, Vegetable	6/1 gallon can	19,700
A410	Peaches, Cling	6/#10 can	26,400
A411	Peaches, Freestone	6/#10 can	6,600

¹Presumed to be used for this purpose.

DRY (Continued)

B460	Peanut Butter	6/#10 can	24,200
A430	Pears	6/#10 can	34,700
A630	Pork, with Natural Juice	24/29 ounce can	28,152
A220	Potatoes, Sweet Syrup	6/#10 can	16,496
A801	Salmon, Pink	48/15.5 ounce can	2,112
B720	Shortening, Vegetable	12/3# can	21,810
A246	Tomato Paste	6/#10 can	51,690
A247	Tomatoes	6/#10 can	35,197
A710	Tuna, Chunk Light/Water	6/66.5 ounce can	3,900

DRY (Special Care)

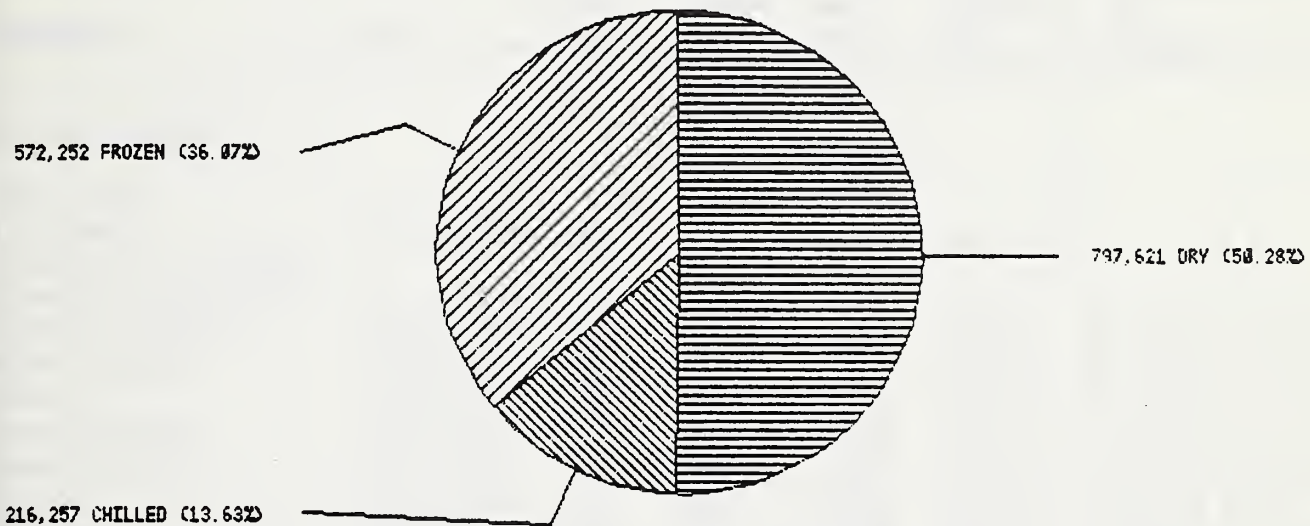
A255	Almonds, Rst. Whole Shel'd	25# carton	1,500
A256	Almonds, Nat Whole Shel'd	25# carton	2,250
B141	Corn Meal, Degermed	5/10# bag	16,000
A575	Egg Mix	4/10# bag	14,000
A475	Figs, Dried	30# carton	2,668
B180	Flour, All Purpose Bleached	5/10# bag	63,950
B190	Flour, All Purpose	50# bag	1,900
B230	Flour, Bread Bleached	5/10# bag	42,550
B430	Macaroni	1/20# carton	59,900
B110	Milk, NFD Reg Bulk	50# bag	19,080
B440	Oats, Rolled	12/3# bag	20,007
B450	Oats, Rolled	50# bag	1,600
A490	Prunes, Dried Pitted	25# carton	21,560
A500	Raisins	30# carton	25,400
B530	Rice, Milled	25# bag	21,133
B840	Spaghetti, Enriched	1/20# carton	45,850

TOTAL DRY (FOOD SERVICE OPERATIONS)	797,621
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TOTAL, ALL (FOOD SERVICE OPERATIONS)	1,586,130
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Type of Storage 1	Food Service Operations		
	Items	Cases	Percent
	2	3	4
	No.	No.	%
Frozen	15	572,252	36.1
Chilled	6	216,257	13.6
Dry	35	797,621	50.3
TOTAL	56	1,586,130	100.0



USDA DONATED FOODS: 1984-85 PENNSYLVANIA FOOD SERVICE OPERATIONS 1,586,130 Ct

PARTIAL LIST

Following is a list of USDA donated foods which shows package dimensions, weights, and cubes. Since this list has not been updated since 1981, the items are not totally complete

Commodity	Pack	Net Weight lbs.	Gross Weight lbs.	Cube per Pkg.	Wt. Per Cubic Ft. lbs.	Dimensions in Inches
MEAT AND POULTRY						
Beef & Pork, Frz, Grnd.	55# Carton	55	57	.87	65.5	20 x 15 x 5
Chicken, Frz, cut-up (Breaded-thighs/drums)	30# Carton	30	31.64	1.22	25.9	21 3/5 x 15 1/2 x 6 1/3
Chicken, Patties	36# Carton	36	37.64	1.38	27.2	22 1/3 x 17 x 6 1/3
Meats, Canned	24/29oz.can	43.5	52	1.12	46.4	12 3/8 x 9 1/2 x 16 3/8
Turkeys	40# Carton	40	42	1.46	28.8	21 x 15 x 8
Turkey, Roast	40# Carton	40	42	.74	56.8	17 7/8 x 13 1/3 x 5 3/4
Turkey, Rolls	40# Carton	40	42	1.10	38.2	18 1/2 x 10 1/3 x 10
Egg Mix	4/10# Bag	40	43	1.56	27.6	15 x 15 x 12
Egg Mix	48/6oz.Foil	18	22	1.09	20.2	16 1/2 x 12 x 9 1/2
Meatball Stew	24/24 oz.	36	45	.48	93.7	12 3/4 x 9 7/8 x 6 5/8
VEGETABLES						
Beans, Green, Canned	24/#303	23.25	30	.65	46.2	13 x 9 3/16 x 9 3/8
Carrots, Canned	24/#303	24	31	.65	47.6	13 x 9 3/16 x 9 3/8
Corn, Canned Whole	24/#303	24	31	.65	47.6	13 x 9 3/16 x 9 3/8
Corn, Canned Cream	24/#303	24	30.5	.65	46.9	13 x 9 3/16 x 9 3/8
Peas, Canned	24/#303	24	30	.65	46.2	13 x 9 3/16 x 9 3/8
Potatoes, Canned Whole	24/#303	24	31	.65	47.6	13 x 9 3/16 x 9 3/8
Pumpkin, Canned	24/#303	24	29.70	.65	45.7	13 x 9 3/16 x 9 3/8
Spinach, Canned	24/#303	24	31	.65	47.6	13 x 9 3/16 x 9 3/8
Sweetpotatoes, Canned	24/#303	24	31	.65	47.6	13 x 9 3/16 x 9 3/8
Tomatoes, Canned	24/#303	24	30	.65	46.2	13 x 9 3/16 x 9 3/8
Beans, Vegetarian	24/#303	24	28.5	.61	46.7	12 1/4 x 9 1/4 x 9 1/4
Beans, Canned Dried	6/#10	40.5	48	1.02	47.1	19 x 12 3/4 x 7 1/4
Beans, Green, Canned	6/#10	38	46	1.02	45.1	19 x 12 3/4 x 7 1/4
Beans, Vegetarian	6/#10	40.5	48	1.02	47.1	19 x 12 3/4 x 7 1/4
Corn, Canned	6/#10	39.7	47	1.02	47.1	19 x 12 3/4 x 7 1/4
Peas, Green Canned	6/#10	40	47	1.02	46.1	19 x 12 3/4 x 7 1/4
Sweetpotatoes, Dehy	6/#10	23.25	29	1.02	28.4	19 x 12 3/4 x 7 1/4
Sweetpotatoes-Mashed	6/#10	41	47.50	1.02	46.6	19 x 12 3/4 x 7 1/4
Tomato Catsup	6/#10	43.13	49	1.02	48	19 x 12 3/4 x 7 1/4
Tomato Paste	6/#10	41.62	47	1.02	46.1	19 x 12 3/4 x 7 1/4
Tomato, Canned	6/#10	38.25	45	1.02	44.1	19 x 12 3/4 x 7 1/4
Potatoes, Frozen	6/5#	30	32	1.21	26	19 x 12 3/4 x 7 1/4
Potatoes, Dehy	6/5#	30	32.3	1.8	18	20 x 15 x 10 1/2
Potatoes, Dehy	12/1#	12	14	.84	16.1	17 x 11 x 8
Beans, Dry	25#	25	26	.52	50	11 x 3 x 27
Beans, Dry	100#	100	101	2.0	50	16 x 6 x 36
Vegetables, Frozen	30#	30	32	.97	33	17 x 11 x 9

Commodity	Pack	Net Weight lbs.	Gross Weight lbs.	Cube per Pkg.	Wt. Per Cubic Ft. 1' 3.	Dimensions in inches
<u>GRAINS AND DAIRY</u>						
Bulgur	5/10#	50	51	1.8	29	17 x 5 x 36
Bulgur	25#	25	26	.84	31	13 x 4 x 28
Bulgur	50#	50	51	1.7	30	16 x 5 x 36
Butter, Patties	6/5#	30	32	.63	50.8	15 15/16 x 6 7/8 x 10
Butter, Print	32/1#	32	33	.58	56.9	10 3/8 x 9 7/8 x 9 3/4
Butter, Print	36/1#	36	37	.72	51.4	15 7/8 x 7 3/4 x 10 1/4
Cheese, Process	15/2#	30	32	.54	59.2	13 15/16 x 8 1/2 x 7 1/4
Cheese, Process	6/5#	30	32	.57	56.1	11 1/2 x 7 1/2 x 11 1/4
Cornmeal	5/10#	50	51	1.17	43.5	21 x 2 x 8
Cornmeal	25#	25	26	.58	44.8	11 x 3 1/2 x 26
Cornmeal	50#	50	51	1.20	42.5	16 x 4 x 32 1/2
Evaporated Milk	48/13 oz.	43.41	48.41	1.01	47.9	17 13/16 x 11 7/8 x 8
Farina	24/14 oz.	21	22	.60	36.7	10 5/8 x 6 1/2 x 15 1/4
Flour	10/5#	50	51	1.02	50	20 x 11 x 8
Flour	5/10#	50	51	.99	51.5	22 x 13 x 6
Flour	25#	25	26	.49	53	11 x 3 1/2 x 22
Flour	50#	50	51	1.04	49	16 x 4 x 28
Grits	50#	50	51	1.20	42.5	16 x 4 x 32 1/2
Macaroni	24/1#	24	25	1.18	21.2	17 5/8 x 14 x 8 1/2
Macaroni	2/10#	20	21	.76	27.6	11 x 10 x 12
Macaroni	1/20#	20	21	.75	28	10 3/8 x 10 3/8 x 12
Masa, Flour	10/5#	50	51	1.13	45.1	20 x 11 3/16 x 8 3/4
Milk, Instant, NFD	6/4#	24	25	1.16	21.4	20 1/2 x 10 1/4 x 9 5/8
Milk, Instant, NFD	12/1.96 oz.	19.2	20.2	1.54	13.12	17 1/2 x 11 1/4 x 13 1/4
Milk, NFD	50#	50	51	1.18	43.2	16 x 4 x 32
Peanut Butter	6/10	41.25	46	2.22	20.7	18 1/2 x 12 1/4 x 16 3/4
Peanut Butter	24/2#	48	56	1.18	47.4	16 3/8 x 12 15/16 x 9 1/4
Peanut, Roasted	6/10	24	29.6	.96	30.8	7 1/4 x 18 5/8 x 2 1/4
Rice, Milled	24/2#	48	49	1.00	49	17 x 12 x 8 1/2
Rice, Milled	25#	25	26	.47	55.3	13 x 3 1/2 x 18
Rice, Milled	50#	50	51	1.25	63.7	14 x 5 1/2 x 28
Oats, Rolled	12/3#	36	37	1.66	22.3	26 x 17 x 6 1/2
Oats, Rolled	50#	50	51	2.00	25.5	19 x 5 x 36
Wheat, Rolled	5/10#	50	51	2.47	20.6	12 1/2 x 9 1/2 x 36
Wheat, Rolled	25#	25	26	.88	29.5	15 x 3 1/2 x 29
Wheat, Rolled	12/3#	36	37	2.14	17.3	14 x 8 x 33

Commodity	Pack	Net Weight Lbs.	Gross Weight Lbs.	Cube per Pkg.	Wt. Per Cubic Ft. Lbs.	Dimensions in Inches
hortening	12/3#	36	42	1.10	38.2	15 1/2 x 10 1/2 x 11 3/4
hortening	50#	50	51	1.35	37.8	19 x 3 1/2 x 35
paghetti	24/1#	24	25	.72	34.7	11 9/16 x 9 3/8 x 11
paghetti	20#	24	25	.64	39.2	22 3/8 x 8 5/8 x 5 3/4
vegetable Oil	6/1 gallon	46.2	54	1.02	52.9	13 1/2 x 13 x 10

FRUITS

pples, Fresh		40	43	1.9	22.6	24 x 14 x 10
ears, Fresh		45	48.5	2.3	21.1	24 x 14 x 12
pplesauce, Canned	24/#303	24	30	1.33	22.6	13 x 19 3/4 x 9
pplesauce, Canned	6/#10	40.5	46.5	1.02	45.6	19 x 12 3/4 x 7 1/3
ruit Cocktail, Canned	6/#10	41.4	47.9	1.02	46.1	19 x 12 3/4 x 7 1/3
ixed Fruit	6/#10	40	46	1.02	45.1	19 x 12 3/4 x 7 1/3
aches, Canned	6/#10	40	46	1.02	45.1	19 x 12 3/4 x 7 1/3
ars, Canned	6/#10	40	46	1.02	45.1	19 x 12 3/4 x 7 1/3
ineapple, Canned	6/#10	41.4	47	1.02	46.1	19 x 12 3/4 x 7 1/3
lums, Canned	6/#10	41.4	48	1.02	47.1	19 x 12 3/4 x 7 1/3
pricots, Canned	24/#2.5	43.5	52	1.13	46	16 1/2 x 12 1/4 x 9 1/4

JUICES

pple Juice, Canned	12/#3 cyl.	37.7	44	.79	55.7	14 x 10 1/2 x 9 1/4
rapefruit Joe. Canned	12/#3 cyl.	37.3	43.5	.79	55.1	14 x 10 1/2 x 9 1/4
range Juice, Canned	12/#3 cyl.	37.3	43.5	.79	55.1	14 x 10 1/2 x 9 1/4
onato Juice, Canned	12/#3 cyl.	36.5	43.5	.79	55.1	14 x 10 1/2 x 9 1/4
ineapple Joe. Canned	12/#3 cyl.	37.7	44.0	.79	55.7	14 x 10 1/2 x 9 1/4

verage 1.1 cubic feet per case and 40 pounds per case.

CONTRIBUTOR: _____ REGION: _____ SCHOOL YEAR: _____

ated Food: _____ Cost Per Case: \$ _____ Section No.: _____

Size: _____ No. Cases: _____

ht Per Case: _____ Allocation No.: _____

Copy Order No. (D/O): _____

Mode of Storage: Chilled () Dry () Frozen ()

ected Period of Arrival: _____

ALLOCATION

[illegible]

(Over)

FORWARDING NOTICE

E-IDA FOODS INC
BY 10 BOISE ID 83707E-IDA FOODS INC
BY ID

IN INSTRUCTED TO DELIVER THE FOLLOWING COMMODITY

COMMODITY DESCRIPTION
POTATOES-FRZN ROUNDS, 30#

WAREHOUSE LOT IDENTIFICATION

DATE 01-11-85	CONTRACT NO. OR WHSE. CODE 02 52084 03 013	N/D NO. 02152704
DOCKET ANP 307	ANNOUNCEMENT EV-897	INVITATION INV 003
COMM. CODE 4 5 3533500	CERTIFICATE NO.	GRADE FOB OR FAS
		FOB OR FAS FOB ORGN

PC	PY	COMM. CODE	NO. OF UNITS	SIZE-TYPE UNITS	GROSS WEIGHT	NET WEIGHT	CERTIFICATE NO.	EX N/D NO.

CONSIGNEE AND DESTINATION 140449 R				NOTIFIED? Yes <input type="checkbox"/> No <input type="checkbox"/>	
DO. SA. REQ. SALE, WHSE.	NO. OF UNITS	SIZE-TYPE UNITS	GROSS WEIGHT	NET WEIGHT	DELIVERING CARRIER
104F201	1,100	6/5 LB BAG	33,200	33,000	SP
DESTINATION PHOENIX AZ			PLACE ENTIRE SHPMT IN STGE		
ARIZONA STATE DEPT OF PUBLIC INSTRUCTION DIR COMMODITY DISTRIBUTION			1670		
NO ARCTIC STORAGE COMPANY			2440 W LINCOLN		
RAIL SP					
TRUCK CALL 602-252-4841					

HOW ON TRUCK SHIPMENT P/L *CONTACT CONSIGNEE 24 HRS IN ADVANCE FOR UNLOAD APPT*

CONSIGNEE RECEIPT FOR Units Received Date Rec'd Received By (Signature & Title)

NON-COMMON CARRIER MOVES

PC	PY	COMM. CODE	NO. OF UNITS	SIZE-TYPE UNITS	GROSS WEIGHT	NET WEIGHT	CERTIFICATE NO.	EX N/D NO.

CONSIGNEE AND DESTINATION II				NOTIFIED? Yes <input type="checkbox"/> No <input type="checkbox"/>	
DO. SA. REQ. SALE, WHSE.	NO. OF UNITS	SIZE-TYPE UNITS	GROSS WEIGHT	NET WEIGHT	DELIVERING CARRIER

CONSIGNEE RECEIPT FOR Units Received Date Rec'd Received By (Signature & Title)

NON-COMMON CARRIER MOVES

SHIP NOT EARLIER 02-01-85	SHIP NOT LATER 02-15-85	UNITS 1,100	NET WEIGHT 33,000
GROSS WEIGHT 33,200			

INFO. REQUIRED, PHONE

ID W JOHNSON 913-236-3062

PARKER REFRIGERATED SERVICE 206-922-0400 224H42 PKRS402 DEM

FACT TRUCKER AT LEAST 48 HOURS BEFORE PICKUP IS TO BE MADE. IF

TRUCKER IS UNABLE TO PICK UP COMMODITY ON DATE REQUESTED, NOTIFY THIS

OFFICE IMMEDIATELY BY PHONE. 913-236-3075.

ON 2/L: LOAD IN REFRIGERATED TRUCK. TEMPERATURE NOT TO EXCEED

DURING LOADING, ENROUTE AND UNTIL UNLOADING.

WAREHOUSE OR CONSIGNEE RECEIPT (Non-Negotiable)

NO. OF UNITS		GROSS WT.*	NET WT.*	LOT NO. ASSIGNED	TEMP. ON ARRIVAL INSIDE CAR OUTSIDE CAR
					RECEIVED FOR STORAGE PROCESSING OTHER
I certify that we have accepted from Agricultural Stabilization and Conservation Service the commodity shown herein which will be in accordance with terms and conditions of contracts or tariff whichever is applicable.				*NOTE: Explain all difference between billed and received weight on reverse.	
OFFICE OR FACILITY		AUTHORIZED SIGNATURE & TITLE SUPPLEMENT D 187		DATE	

Distributor's Receiving Report for Donated Foods

INSTRUCTIONS: Agent distributor complete all applicable entries and return this report to the Division of Food Distribution within 24 hours after unloading transport.

PART 1 - IDENTIFICATION

DISTRIBUTOR _____

REGION NO. _____

A. Item _____

B. Delivery Order No. _____

C. State Number _____

D. Amount Shipped _____

E. Arrival Date _____

F. Car Initial and No. _____

(Or Name of Truck Line)

PART 2 - CAR SEAL RECORD

A. Seals Intact When Car Received? Yes _____ No _____

B. Inbound Seal No.(s) _____

C. Outbound Seal No.(s) _____

(If Car Empty - Write "Empty")

D. Inside Seal No.(s) _____

(If Applicable)

PART 3 - SHIPMENT RECEIPT

A. Amount shown in Part 1-D received except as noted in Part 4-B.

(Signature for Distributor Contractor) (Date)

PART 4 - EXCEPTIONS

A. No. Over _____ No. Short _____ No. Damaged _____

No. Recoopered _____ No. Dumped _____ No. to Railroad

Salvage _____

Net Loss _____ Net Gain _____

B. Total No. Accepted _____

C. FNS-57 Attached _____ Will be sent later _____ (Check one)

D. Attach Bill of Lading _____

REPORT OF SHIPMENT RECEIVED OVER, SHORT AND/OR DAMAGED

SEE INSTRUCTIONS ON REVERSE

SECTION A - SHIPMENT IDENTIFICATION

1 NAME OF COMMODITY		2 TYPE OF PACK		3 DESTINATION CITY AND STATE	
4 DELIVERY ORDER NO		5 NOTICE TO DELIVER NO		6 CONTRACT NO.	
7 METHOD OF DELIVERY <input type="checkbox"/> RAIL <input type="checkbox"/> TRUCK		8 RR CAR OR TRUCK NO			
9 PLACED FOR LOADING DATE TIME		10 UNLOADED STARTED (Date and Time)		11 OCEAN BILL OF LADING NO (if overseas shipment)	
		COMPLETED (Date and Time)			

SECTION B - OVERAGE OR SHORTAGE

12. QUANTITY					
A REPORTED SHIPPED		B RECEIVED		C OVER	
				D SHORT	
13 OVERAGE SHORTAGE					
A WHEN DISCOVERED <input type="checkbox"/> BEFORE UNLOADING <input type="checkbox"/> DURING UNLOADING <input type="checkbox"/> AFTER UNLOADING			B HOW DETERMINED <input type="checkbox"/> UNLOADING TALLY <input type="checkbox"/> PHYSICAL RECOUNT <input type="checkbox"/> ISSUE RECEIPTS		
			14. CARRIER'S AGENT PRESENT DURING UNLOADING <input type="checkbox"/> YES <input type="checkbox"/> NO		

15. GOOD SEAL NUMBERS

A INBOUND NUMBERS AND CONDITION OF SEALS		B OUTBOUND NUMBERS	

16 LOCATION SHIPMENT UNLOADED

A RAIL <input type="checkbox"/> DIRECT TO CONSIGNEE (Private siding) <input type="checkbox"/> OTHER (Explain)		B TRUCK <input type="checkbox"/> DIRECT TO WAREHOUSE <input type="checkbox"/> OTHER (Explain)	
<input type="checkbox"/> TEAM TRUCK VIA TRUCK TO CONSIGNEE		<input type="checkbox"/> DIRECT TO RECIPIENT AGENCY	

17 AGENT NOTIFICATION

A NAME OF AGENT		C HOW NOTIFIED <input type="checkbox"/> IN PERSON <input type="checkbox"/> LETTER <input type="checkbox"/> TELEPHONE <input type="checkbox"/> TELEGRAM		18. DID CARRIER'S AGENT RESPOND TO NOTIFICATION <input type="checkbox"/> YES (In what way) <input type="checkbox"/> NO (Explain)	
B DATE NOTIFIED					

SECTION C - DAMAGE

19 QUANTITY					
A REPORTED SHIPPED		B RECEIVED		C DAMAGED	
				D NET LOSS	
20 WHEN DAMAGE DISCOVERED <input type="checkbox"/> BEFORE UNLOADING <input type="checkbox"/> DURING UNLOADING <input type="checkbox"/> AFTER UNLOADING				21. NATURE OF DAMAGE	
22 LOAD SHIFTED OR JUMBOLED <input type="checkbox"/> YES <input type="checkbox"/> NO		23. DISPOSITION OF DAMAGED QUANTITY			
24 AGENT NOTIFICATION				25. DID CARRIER'S AGENT RESPOND TO NOTIFICATION <input type="checkbox"/> YES (In what way) <input type="checkbox"/> NO (Explain)	
A NAME OF AGENT		C HOW NOTIFIED <input type="checkbox"/> IN PERSON <input type="checkbox"/> LETTER <input type="checkbox"/> TELEPHONE <input type="checkbox"/> TELEGRAM			
B DATE NOTIFIED					

26 IF PERISHABLE COMMODITY, COMPLETE APPLICABLE ITEMS

A QUANTITY OF ICE IN BUNKERS		B POSITION OF VENTS AND PLUGS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED		C WAS MECHANICAL REFRIGERATION EQUIPMENT OPERATING <input type="checkbox"/> YES <input type="checkbox"/> NO		D WAS CAR HEATED <input type="checkbox"/> YES <input type="checkbox"/> NO		E NO OF HEATERS		F TEMPERATURE ON ARRIVAL INSIDE OUTSIDE	

27. I CERTIFY that the information and statements above are, to the best of my knowledge and belief, true and correct.

DATE		SIGNATURE OF CONSIGNEE	

28. Receipt of a copy of this report is hereby acknowledged and the facts contained herein are verified.

SIGNATURE OF CARRIER'S AGENT		NAME AND ADDRESS OF DELIVERING CARRIER	
DATE			

**DONATED FOODS ORDER FORM FOR
PUBLIC AND PRIVATE SCHOOLS**

Bill To _____ No. _____

Deliver To _____ No. _____

Date Mailed _____ For Delivery Week of _____

Mail one week prior to deliver date.

(a) Code	Item	Unit	No.** Units
-----Dry Items-----			
A350	Applesauce, Cnd	6/#10	
A360	Apricots, Cnd	6/#10	
A050	Beans, Green	6/#10	
A970	Beans, Dry Pinto	6/#10	
A610	Beef, W/NJ Cnd	24 /29oz	
A110	Corn, Cnd liquid	6/#10	
B405*	Honey, Processed	6/#10	
B670	Oil, Vegetable	6/lgal	
A410	Peaches, Cling	6/#10	
B460	Peanut Butter	6/#10	
B500	Peanuts, Roasted	6/#10	
A430	Pears	6/#10	
A630*	Pork, W/NJ Cnd	24 /29oz	
B720	Shortening, Veg	12/3#cn	
A246	Tomato Paste	6/#10	
A247	Tomatoes	6/#10	
A710	Tuna Chunk L/W	6 66.5oz	

-----Dry Special Care Items-----			
A255*	Almonds, RstWhoSd	25#ctn	
A942	Beans, Dry Pinto	25#bag	
B141	Corn Meal, Deger	5/10#bg	
A575*	Egg Mix	4/10#ct	
B190	Flour, AllPur Bl	50#bag	
B240*	Flour, Bread Ble	50#bag	
B350*	Flour, Who Wheat	50#bag	
B430	Macaroni	20#ctn	
B110*	Milk NFD RegBulk	50#bag	
B450	Oats, Rolled	50#bag	
A200	Potatoes, Dehydr	6/5#	
A490*	Prunes, Dry Pitd	25#ctn	
A500*	Raisins	30#ctn	
B530*	Rice, Milled	25#bag	
B840	Spaghetti Enrich	20#ctn	
A257	Walnuts, Eng pcs	30#ctn	

(a) Code	Item	Unit	No.** Units
-----Freezer Items-----			
A582	Beef, Ground	55#ctn	
A367	Blueberries Cul	30#ctn	
B040*	Butter, Print	32/1#	
B078*	Mozarella Vari	#s	
A365	Cherries RT Pit	30#cnd	
A527	Chicken Pat Brd	40#ctn	
A513	Chickens Cut-Up	40#ctn	
A514	Chickens Thi/Dr	40#ctn	
A130	Corn	30#ctn	
A211	Potatoes, DeepF	6/5#cs	
A210	Potatoes, OvenF	6/5#cs	
A170	Potato Rounds	6/5#cs	
A534	Turkey Rst8-12#	4/ctn	
A529	Turkeys, Whole	12-24#	
A288	Vegetables, Mix	30#case	

-----Cooler Items-----			
A432	Apples, Fresh	40#case	
B060*	Cheese, Process	6/5#lvs	
A441	Pears D'AnjFres	45#ctn	
A214	Potatoes RusFre	50#bag	

-----Other Items-----			

TOTAL
Min 10 Cases

(a) Distributors may substitute their own product codes.

* Indicates bonus item.

** Units required in terms of full case, carton, bag, etc.

INSTRUCTIONS TO RECIPIENT AGENCIES

Fill out a separate form for each issue point and mail to the donated foods distributor to arrive at the distributor's computer room at least 48 hours prior to scheduled delivery dates. Recipient agencies must order a minimum of 10 cases per issue drop point.¹

Bonus Items can be ordered at any time and in any quantity. Offer and Acceptance (Group B) Items may be ordered at any time against allotted quantities. Group A Items can be ordered initially only after arrival, as notified by the State and then only in allotted quantities. Any agency not wanting all of its allotment of any item may request the State to reallocate all or part of the quantities.

To prevent over ordering of Groups A and B Items, recipient agencies must maintain a perpetual inventory of balance in stock at a distributor's warehouse. Inventory balances can be maintained by computer or manually on Form FD-6. Distributors must also maintain perpetual inventory by agencies to prevent over-issuing. In the event an agency over orders, the issue ticket will indicate "Green Beans 6/10# OD -- (Overdrawn)."

Distributors will notify school districts of any Group A Items which have not been withdrawn within 60 days after arrival. Group A Items not withdrawn in this time frame are subject either to a surcharge or reallocation.

Distributors are required to provide the State with end of the year utilization reports by recipient agencies.

The identification numbers used on this form are to be furnished by the distributor, i.e., "Bill To," "Deliver To" and Item Codes. The Item Codes shown are the USDA numbers and may or may not be used at the discretion of the distributor. This form (FD-3A) will be designed and furnished by distributors. However, copies are to be reproduced by recipient agencies.

¹ A recipient agency can order less than 10 cases by paying a minimum fee of 10 times the per case charge. However, if the total amount allocated to an agency is less than 10 cases per month, the full amount must be delivered monthly at the regular per case charge.

**DONATED FOODS ORDER FORM FOR
CHARITABLE INSTITUTIONS**

Bill To _____ No. _____

Deliver To _____ No. _____

Date Mailed _____ For Delivery Week of _____

Mail one week prior to deliver date.

(a) Code	Item	Unit	No.** Units
-----Dry Items-----			
A360*	Apricots	6/#10	
B405*	Honey, Processed	6/5#	
B670	Oil, Vegetable	6/lgal	
A411*	Peaches Freestne	6/#10	
B460	Peanut Butter	6/#10	
B500	Peanuts, Roasted	6/#10	
A360*	Pork W/NJ cnd	24 /29oz	
B720	Shortening, Veg	12/3#	

-----Dry Special Care Items-----			
B141	Corn Meal Degerm	5/10#bg	
A575*	Egg Mix	4/10#bg	
B190	Flour, AllPur BL	50#bag	
B240*	Flour, Bread BL	50#bag	
B350	Flour, Who Wheat	5/10#bg	
B360	Flour, Who Wheat	50#bag	
B430	Macaroni	20#ctn	
B110*	Milk NFD RegBulk	50#bag	
B450	Oats, Rolled	50#bag	
A490*	Prunes, Dry Pitd	25#ctn	
B530*	Rice, Milled	25#bag	
B840	Spaghetti Enrich	20#ctn	

(a) Code	Item	Unit	No.** Units
-----Freezer Items-----			
B040*	Butter, Print	32/1#	

-----Cooler Items-----			
B060*	Cheese, Process	6/5#lvs	
B061*	Cheese, Process	12/2#	
B072*	Cheese Ched Yel	40#bloc	

-----Other Items-----			

TOTAL
Min 10 Cases

(a) Distributors may substitute their own product codes.

* Indicates bonus item.

** Units required in terms of full case, carton, bag, etc.

FD-3A-6, 11/85 AZ:JM

INSTRUCTIONS TO RECIPIENT AGENCIES

Fill out a separate form for each issue point and mail to the donated foods distributor to arrive at the distributor's computer room at least 48 hours prior to scheduled delivery dates. Recipient agencies must order a minimum of 10 cases per issue drop point.¹

Bonus Items can be ordered at any time and in any quantity. Offer and Acceptance (Group B) Items may be ordered at any time against allotted quantities. Group A Items can be ordered initially only after arrival, as notified by the State and then only in allotted quantities. Any agency not wanting all of its allotment of any item may request the State to reallocate all or part of the quantities.

To prevent over ordering of Groups A and B Items, recipient agencies must maintain a perpetual inventory of balance in stock at a distributor's warehouse. Inventory balances can be maintained by computer or manually on Form FD-6. Distributors must also maintain perpetual inventory by agencies to prevent over-issuing. In the event an agency over orders, the issue ticket will indicate "Green Beans 6/10# OD -- (Overdrawn)."

Distributors will notify school districts of any Group A Items which have not been withdrawn within 60 days after arrival. Group A Items not withdrawn in this time frame are subject either to a surcharge or reallocation.

Distributors are required to provide the State with end of the year utilization reports by recipient agencies.

The identification numbers used on this form are to be furnished by the distributor, i.e., "Bill To," "Deliver To" and Item Codes. The Item Codes shown are the USDA numbers and may or may not be used at the discretion of the distributor. This form (FD-3A) will be designed and furnished by distributors. However, copies are to be reproduced by recipient agencies.

¹A recipient agency can order less than 10 cases by paying a minimum fee of 10 times the per case charge. However, if the total amount allocated to an agency is less than 10 cases per month, the full amount must be delivered monthly at the regular per case charge.

DONATED FOODS ORDER FORM FOR
NUTRITION PROGRAM FOR THE ELDERLY

Bill To _____ No. _____

Deliver To _____ No. _____

Date Mailed _____ For Delivery Week of _____

Mail one week prior to deliver date.

(a) Code	Item	Unit	No.** Units
-----Dry Items-----			
B405*	Honey, Processed	6/5#cnd	

-----Dry Special Care Items-----			
B110*	Milk NFD RegBulk	50#bag	

(a) Code	Item	Unit	No.** Units
-----Freezer Items-----			
B040*	Butter, Print	32/l#	

-----Cooler Items-----			
B060*	Cheese, Process	6/5#lvs	
B072*	Cheese Ched Yel	40#bloc	

-----Other Items-----			

TOTAL
Min 10 Cases

(a) Distributors may substitute their own product codes.

* Indicates bonus item.

** Units required in terms of full case, carton, bag, etc.

FD-3A-3, 11/85 AZ:JM

INSTRUCTIONS TO RECIPIENT AGENCIES

Fill out a separate form for each issue point and mail to the donated foods distributor to arrive at the distributor's computer room at least 48 hours prior to scheduled delivery dates. Recipient agencies must order a minimum of 10 cases per issue drop point.¹

Bonus Items can be ordered at any time and in any quantity. Offer and Acceptance (Group B) Items may be ordered at any time against allotted quantities. Group A Items can be ordered initially only after arrival, as notified by the State and then only in allotted quantities. Any agency not wanting all of its allotment of any item may request the State to reallocate all or part of the quantities.

To prevent over ordering of Groups A and B Items, recipient agencies must maintain a perpetual inventory of balance in stock at a distributor's warehouse. Inventory balances can be maintained by computer or manually on Form FD-6. Distributors must also maintain perpetual inventory by agencies to prevent over-issuing. In the event an agency over orders, the issue ticket will indicate "Green Beans 6/10# OD -- (Overdrawn)."

Distributors will notify school districts of any Group A Items which have not been withdrawn within 60 days after arrival. Group A Items not withdrawn in this time frame are subject either to a surcharge or reallocation.

Distributors are required to provide the State with end of the year utilization reports by recipient agencies.

The identification numbers used on this form are to be furnished by the distributor, i.e., "Bill To," "Deliver To" and Item Codes. The Item Codes shown are the USDA numbers and may or may not be used at the discretion of the distributor. This form (FD-3A) will be designed and furnished by distributors. However, copies are to be reproduced by recipient agencies.

¹A recipient agency can order less than 10 cases by paying a minimum fee of 10 times the per case charge.

DONATED FOODS ORDER FORM FOR
CHILD CARE

Bill To _____ No. _____

Deliver To _____ No. _____

Date Mailed _____ For Delivery Week of _____

Mail one week prior to deliver date.

(a) Code	Item	Unit	No.** Units
-----Dry Items-----			
B405*	Honey, Processed	6/5#cnd	

-----Dry Special Care Items-----			
B110*	Milk NFD RegBulk	50#bag	
A500*	Raisins	30#ctn	

(a) Code	Item	Unit	No.** Units
-----Freezer Items-----			
B040*	Butter, Print	32/1#	

-----Cooler Items-----			
B060*	Cheese, Process	6/5#lvs	
B061*	Cheese, Process	12/2#	
B072*	Cheese Ched Yel	40#bloc	

-----Other Items-----			

TOTAL

Min 10 Cases

(a) Distributors may substitute their own product codes.

* Indicates bonus item.

** Units required in terms of full case, carton, bag, etc.

FD-3A-2, 11/85 AZ:JM

INSTRUCTIONS TO RECIPIENT AGENCIES

Fill out a separate form for each issue point and mail to the donated foods distributor to arrive at the distributor's computer room at least 48 hours prior to scheduled delivery dates. Recipient agencies must order a minimum of 10 cases per issue drop point.¹

Bonus Items can be ordered at any time and in any quantity. Offer and Acceptance (Group B) Items may be ordered at any time against allotted quantities. Group A Items can be ordered initially only after arrival, as notified by the State and then only in allotted quantities. Any agency not wanting all of its allotment of any item may request the State to reallocate all or part of the quantities.

To prevent over ordering of Groups A and B Items, recipient agencies must maintain a perpetual inventory of balance in stock at a distributor's warehouse. Inventory balances can be maintained by computer or manually on Form FD-6. Distributors must also maintain perpetual inventory by agencies to prevent over-issuing. In the event an agency over orders, the issue ticket will indicate "Green Beans 6/10# OD -- (Overdrawn)."

Distributors will notify school districts of any Group A Items which have not been withdrawn within 60 days after arrival. Group A Items not withdrawn in this time frame are subject either to a surcharge or reallocation.

Distributors are required to provide the State with end of the year utilization reports by recipient agencies.

The identification numbers used on this form are to be furnished by the distributor, i.e., "Bill To," "Deliver To" and Item Codes. The Item Codes shown are the USDA numbers and may or may not be used at the discretion of the distributor. This form (FD-3A) will be designed and furnished by distributors. However, copies are to be reproduced by recipient agencies.

¹A recipient agency can order less than 10 cases by paying a minimum fee of 10 times the per case charge.

DONATED FOODS ORDER FORM FOR
SUMMER FOOD SERVICE

Bill To _____ No. _____

Deliver To _____ No. _____

Date Mailed _____ For Delivery Week of _____

Mail one week prior to deliver date.

(a) Code	Item	Unit	No.** Units
-----Dry Items-----			
B405*	Honey, Processed	6/5#	cnd

-----Dry Special Care Items-----			
B110*	MILK NFD Reg	Bulk	50#bag

(a) Code	Item	Unit	No.** Units
-----Freezer Items-----			
B040*	Butter, Print	32/1#	

-----Cooler Items-----			
B060*	Cheese, Process	6/5#	lvs
B072*	Cheese Ched Yel	40#	bloc

-----Other Items-----			

TOTAL

Min 10 Cases

(a) Distributors may substitute their own product codes.

* Indicates bonus item.

** Units required in terms of full case, carton, bag, etc.

FD-3A-4, 11/85 AZ:JM

INSTRUCTIONS TO RECIPIENT AGENCIES

Fill out a separate form for each issue point and mail to the donated foods distributor to arrive at the distributor's computer room at least 48 hours prior to scheduled delivery dates. Recipient agencies must order a minimum of 10 cases per issue drop point.¹

Bonus Items can be ordered at any time and in any quantity. Offer and Acceptance (Group B) Items may be ordered at any time against allotted quantities. Group A Items can be ordered initially only after arrival, as notified by the State and then only in allotted quantities. Any agency not wanting all of its allotment of any item may request the State to reallocate all or part of the quantities.

To prevent over ordering of Groups A and B Items, recipient agencies must maintain a perpetual inventory of balance in stock at a distributor's warehouse. Inventory balances can be maintained by computer or manually on Form FD-6. Distributors must also maintain perpetual inventory by agencies to prevent over-issuing. In the event an agency over orders, the issue ticket will indicate "Green Beans 6/10* OD -- (Overdrawn)."

Distributors will notify school districts of any Group A Items which have not been withdrawn within 60 days after arrival. Group A Items not withdrawn in this time frame are subject either to a surcharge or reallocation.

Distributors are required to provide the State with end of the year utilization reports by recipient agencies.

The identification numbers used on this form are to be furnished by the distributor, i.e., "Bill To," "Deliver To" and Item Codes. The Item Codes shown are the USDA numbers and may or may not be used at the discretion of the distributor. This form (FD-3A) will be designed and furnished by distributors. However, copies are to be reproduced by recipient agencies.

¹ A recipient agency can order less than 10 cases by paying a minimum fee of 10 times the per case charge.

**DONATED FOODS ORDER FORM FOR
SUMMER CAMP**

Bill To _____ No. _____

Deliver To _____ No. _____

Date Mailed _____ For Delivery Week of _____

Mail one week prior to deliver date.

(a) Code Item Unit No.**
Units

-----Dry Items-----

B405* Honey, Processed 6/5#cnd

B720 Shortening, Veg 12/3#cn

-----Dry Special Care Items-----

B190 Flour, AllPur BL 50#bag

B110* Milk NFD RegBulk 50#bag

B450 Oats, Rolled 50#bag

B840 Spaghetti Enrich 20#ctn

(a) Code Item Unit No.**
Units

-----Freezer Items-----

B040* Butter, Print 32/1#

-----Cooler Items-----

B060* Cheese, Process 6/5#lvs

B072* Cheese Ched Yel 40#bloc

-----Other Items-----

TOTAL

Min 10 Cases

(a) Distributors may substitute their own product codes.

* Indicates bonus item.

** Units required in terms of full case, carton, bag, etc.

FD-3A-5, 11/85 AZ:JM

INSTRUCTIONS TO RECIPIENT AGENCIES

Fill out a separate form for each issue point and mail to the donated foods distributor to arrive at the distributor's computer room at least 48 hours prior to scheduled delivery dates. Recipient agencies must order a minimum of 10 cases per issue drop point.¹

Bonus Items can be ordered at any time and in any quantity. Offer and Acceptance (Group B) Items may be ordered at any time against allotted quantities. Group A Items can be ordered initially only after arrival, as notified by the State and then only in allotted quantities. Any agency not wanting all of its allotment of any item may request the State to reallocate all or part of the quantities.

To prevent over ordering of Groups A and B Items, recipient agencies must maintain a perpetual inventory of balance in stock at a distributor's warehouse. Inventory balances can be maintained by computer or manually on Form FD-6. Distributors must also maintain perpetual inventory by agencies to prevent over-issuing. In the event an agency over orders, the issue ticket will indicate "Green Beans 6/10# OD -- (Overdrawn)."

Distributors will notify school districts of any Group A Items which have not been withdrawn within 60 days after arrival. Group A Items not withdrawn in this time frame are subject either to a surcharge or reallocation.

Distributors are required to provide the State with end of the year utilization reports by recipient agencies.

The identification numbers used on this form are to be furnished by the distributor, i.e., "Bill To," "Deliver To" and Item Codes. The Item Codes shown are the USDA numbers and may or may not be used at the discretion of the distributor. This form (FD-3A) will be designed and furnished by distributors. However, copies are to be reproduced by recipient agencies.

¹A recipient agency can order less than 10 cases by paying a minimum fee of 10 times the per case charge.

[illegible]

Haas & Wilkerson

INSURANCE BUYERS FOR INDUSTRY & INDIVIDUALS

EXAMPLE

MAILING ADDRESS: P.O. BOX 10303, KANSAS CITY, MISSOURI 64111

FEDERAL EXPRESS

March 25, 1986

Mr. Grady I. Lawrence, Chairman
Southwest Cold Storage Co.
One North 59th Avenue
Phoenix, Arizona 85043

Re: Arizona Department of Education
Physical Damage Insurance Coverage

Dear Grady:

This letter is to advise you that we have placed Direct Physical Damage insurance coverage on food product, property of the Arizona Department of Education, while in storage in your facility in Phoenix.

The coverage to be provided by Fireman's Fund Insurance Company is on an "all risk" basis subject to a \$50,000. deductible each occurrence. The limit of liability in this policy will be \$1,500,000.

We have ordered the policy effective March 25, 1986, and will forward it to you as quickly as it is received. In the interim, you may consider this letter as evidence of coverage in effect. Should you have any questions regarding the above, please give me a call.

Sincerely yours,


Robert D. Dick

RDD:sa

Supplement I (i)

Home Office — 4300 Johnson Drive (City of Fairway) Shawnee Mission, Kansas 66205
Telephone: 913-432-4400

Telex: 43-7209

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HAAS-WILKERSON AFFILIATED COMPANIES

Haas-Wilkerson-Wohlberg
Americans Services

Specialty Programs Insurers

Britton W. Palmer & Sons — Philadelphia
Theatre Consultants

Criteria for Evaluating Contractors'
Capabilities to Perform as Required

	<u>Acceptable</u>	<u>Unacceptable</u>
1-Adequacy of Warehouse Capacities *	_____	_____
Dry-Regular	_____	_____
Dry-Special Care	_____	_____
Freezer	_____	_____
Cooler	_____	_____
2-Adequacy of Fleet Capacities *		
(Frozen, Chilled & Dry)	_____	_____
3-Adequacy of Warehouse Sanitation	_____	_____
4-Adequacy of Pest Control	_____	_____
5-Orderliness of Facilities	_____	_____
6-Computer Capabilities as related to the requirements of the donated foods program	_____	_____
7-Assignment of Personnel to communicate with recipient agencies and State officials	_____	_____
8-Positive convictions that distributor will make deliveries to recipient agencies on a regularly scheduled basis and in a timely and accurate manner.	_____	_____
9-Location of Warehouse Facilities as a viable option for recipient agencies to exercise their options to pick up donated foods.	_____	_____
10-Intentions of making weekly instead of skip-a-week deliveries to qualified recipient agencies.	_____	_____

A contractor's proposal may be rejected by a majority vote of the Evaluations Committee for failure to satisfactorily meet one or more of the foregoing criteria.

1. Evaluate 1 - 3 Lowest Bidders

* See next page

PHYSICAL DATA 1/(a)- Foundation Data- Based on Trailer Loads

1 case.....	=1 Cubic foot
1 case.....	=40 Pounds
1 cubic foot.....	=40 Pounds
1 linear foot of a delivery truck	=25 Cases
.....	=1,000 Pounds
1 trailer 40 ' long.....	=1,000 Cases
.....	=40,000 Pounds
1 railcar.....	=2 Trailers
.....	=2,000 Cases
.....	=80,000 Pounds

(b)- Warehouse Data

Warehouse module 50'x100'.....	=5,000 sq. ft. (a)
Pallets on floor per warehouse module-2 deep....	=175
Items per warehouse module.....	=175 (1 high)
Height of "super "pallet (select only 1 high)....	=60" (5 ft.)
Number of cases per super pallet (rounded to 5)....	=55
Number of cubic feet per pallet.....	=55
Height of ceiling 2 pallets.....	=12 Feet
3 pallets.....	=18 Feet
4 pallets.....	=24 Feet
Cubic feet per module 12 ' high.....	=60,000
18 ' high.....	=90,000
24 ' high.....	=120,000
Pallets in module 2 pallets high.....	=350
3 pallets high.....	=525
4 pallets high.....	=700
Cases in module 2 pallets high.....	=20,000
3 pallets high.....	=30,000
4 pallets high.....	=40,000
Pounds in module 2 pallets high.....	=800,000
3 pallets high.....	=1,200,000
4 pallets high.....	=1,600,000
Adjustments for total space add for shipping and receiving, administration and other support.....	=20 Percent
For normal inventory deduct.....	=20 Percent

(c)- Delivery Data

Cases per 40' trailer on pallets.....	=800 single ice
in cages (mixed items)....	=650
Minimum number of cases per drop.....	=40 (16 drops)
Optimum number of cases per drop.....	=65 (10 drops)

1/ For estimating only. Most data rounded to 0 or 5.

(a) 4,000 - 8000 cases per 1,000 sq. ft. depending on whether
2 or 4 pallets high, excluding allowance for honeycombing.
To allow for honeycombing, which would give normal inventory
deduct 30%.

EXAMPLE OF
SERVICE AGREEMENT
(CONTRACT)

The following is a FORMAL AGREEMENT as required by the State of Arizona. In other states, formal agreements may not be required. The important rule is to explicitly tie an agreement to the Request for Price proposals. The agreement should include any modifications to the RFP. In some states, a simple and brief Letter of Agreement signed by both parties is sufficient.

SERVICE AGREEMENT FOR WAREHOUSING AND/OR
DELIVERY USDA DONATED FOODS

This agreement is entered into pursuant to ARS 15-203 between the State Board of Education ("BOARD") acting on behalf of the Arizona Department of Education ("DEPARTMENT"), a state agency of the State of Arizona, and Southwest Cold Storage Company ("CONTRACTOR").

The purpose of this agreement is to provide distribution of United States Department of Agriculture (USDA) donated foods and other foods received in the name of the BOARD to Recipient Agencies statewide.

- A. "Recipient Agencies" means disaster organizations, charitable institutions, nonprofit summer camps for children, schools, service institutions, welfare agencies, nutrition programs for the elderly, residential and nonresidential child care institutions receiving foods for their own use.
- B. Central Warehouse is identified as a facility at which all USDA donated foods for a school district/agency are received for further distribution to food preparation sites. This includes central warehouses that are located adjacent to, or as part of a central production facility.

The BOARD and the CONTRACTOR agree to the following terms:

- 1. This agreement shall take effect on July 1, 1986
and shall terminate on June 30, 1987.

It is understood the State of Arizona reserves the right to extend this contract as per RFP 2-86-1, General Agreement Conditions No. 3.

2. In return for the price to be paid by the RECIPIENT AGENCIES, the CONTRACTOR agrees to provide the services as stated in RFP 2-86-1.
3. CONTRACTOR shall supply to BOARD evidence of completion of services covered by this agreement by providing the following items:
 - A. Reports as required by BOARD in a timely manner.
 - B. Responses to request for information from BOARD within ten days of the request.
4. Verification of completion of contractually related work provided in paragraph two shall be done by the staff at the DEPARTMENT or another designee of the BOARD.
5. The BOARD agrees to the prices for the services rendered as follows:

Delivery to Food Prep Sites - \$1.014 per case.

Delivery to Central Warehouse - \$1.077 per case.

Pickup at Distributor - \$.5235 per case.

Storage on Group A commodities after 60-day dwell time - \$.25 per case per month.
6. The method of payment, times of payment, and source of funds are as follows:

Payments shall be made by Recipient Agencies as indicated in Section G of RFP 2-86-1.

Funding for services is to be obtained from Food Service accounts of Recipient Agencies.

In the event that such funds become unavailable, the BOARD shall immediately notify CONTRACTOR and CONTRACTOR shall immediately cease to perform additional services.

7. A \$0.36 (per case) assessment will be billed by the distributor in addition to the distributor's charges. Upon collection, the distributor will release the assessment charges to the BOARD by the tenth of the month following the month of payment.

- *8. Payments to be made by the BOARD shall be subject to the provisions of Arizona Revised Statutes Section 35-181 relating to presentation, approval, and payment of claims. Claims incurred on or before June 30 must be received by BOARD on or before July 31 of that year.

9. The CONTRACTOR accepts the right of the State of Arizona to have access to any books, documents, papers, and records of the CONTRACTOR which are directly pertinent to this agreement for the purpose of making examination, audit, excerpts, and transcriptions. The CONTRACTOR extends the same rights to the USDA and the General Accounting Office of the United States, or any of their duly authorized representatives.

An audit and physical inventory will be made at least once prior to the expiration of the contract period. Any shortages in inventory will be the responsibility of the contractor.

10. With regard to discrimination because of race, age, color, religion, sex, national origin, or handicap, the CONTRACTOR agrees to comply with the applicable provisions of:

* May not be applicable in all States.

Title IX of the Education Act of 1972,
Sections 503 and 504 of the Rehabilitation Act of 1973,
Civil Rights Act of 1964,
Presidential Executive Order 11246,
Governor's Executive Order 75-5,
and all other State and Federal laws, regulations, and executive orders.

11. This agreement may only be modified in writing and must be signed by both parties or their duly authorized agents.
12. No right or interest in this contract shall be assigned without the written permission of the other party, and no delegation of any obligation owed, or of the performance of any obligation, by the CONTRACTOR shall be made without the written permission of the BOARD.
13. The CONTRACTOR agrees to hold in strictest confidence any and all information obtained in the performance of this contract. No information obtained under this contract shall be published or otherwise distributed in any form without the express written permission of the BOARD.
14. This agreement is made in the State of Arizona and shall be litigated in the courts located in Arizona or arbitrated in Arizona using the laws of the State of Arizona.

15. All written communications shall be addressed and mailed or personally served upon the parties as follows:

To the CONTRACTOR:

Lawrence E. Derricott, President
Southwest Cold Storage Company
One North 59th Avenue
Phoenix, AZ 85043

To the BOARD:

Dee Ingino, Director
Food and Nutrition Program
1535 West Jefferson
Phoenix, AZ 85007

Federal I.D. No. _____

16. The CONTRACTOR certifies that the prices bid in this contract have been arrived at independently without consultation, communication or agreements for the purpose of restricting competition as to any matter relating to such prices with any other bidder.
17. The CONTRACTOR certifies it has not paid nor agreed to pay any person other than a bona fide employee of the CONTRACTOR, a fee or a brokerage resulting from the award of this contract.
18. The BOARD may, by written notice to the CONTRACTOR, cancel this contract if it is found by the BOARD that gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the CONTRACTOR, or any agent or representative of the CONTRACTOR to any officer or employee of the State of Arizona.
19. All parties hereby are put on notice that this agreement is subject to cancellation by the Governor pursuant to Arizona Revised Statutes Section 38-511.

20. Failure by the CONTRACTOR to provide the services and materials or to provide the documentation at the time and in the manner described in this agreement shall constitute a breach of this agreement by the CONTRACTOR. The BOARD may at its option cancel this agreement after reasonable written notice to the CONTRACTOR at the address specified in paragraph 15. A determination to cancel this agreement does not waive any other remedy which the BOARD may have pursuant to the State or Federal law.
21. In the event that the United States Department of Agriculture eliminates the donated food shipments to the BOARD, this agreement may be cancelled upon thirty days' written notice from the BOARD to the CONTRACTOR, and payments for warehousing shall be prorated.
22. The CONTRACTOR may terminate this Agreement by giving sixty (60) days' notice in writing to the BOARD only in the event that they cannot continue to provide the services as contained herein. Upon notice of termination or cancellation of this Agreement, the CONTRACTOR assures a smooth transition and uninterrupted service to Recipient Agencies. The CONTRACTOR will comply with the instructions of the BOARD either to distribute all remaining inventories of commodities consigned to the Board or to transfer such inventories to a location(s) designated by the BOARD and transmit such reports as may be required by the BOARD and record and account for final disposition of such commodities.
23. The CONTRACTOR certifies that in the event there will be any individual performing services on this contract who is under other public contract or on other public payroll, the services to be rendered by that individual, pursuant to

this agreement, shall not take place during that individual's hours of regular employment on other public contracts or public payrolls.

24. The CONTRACTOR shall indemnify and hold the BOARD, the DEPARTMENT, harmless from any loss, claim, or damage to persons or property arising out of the CONTRACTOR'S fault or negligence or the fault or negligence of its employees or agents, which indemnity shall survive the termination of this agreement.
25. Disputes arising under this agreement are subject to arbitration to the extent required by Arizona Revised Statutes Section 12-1518.
26. The BOARD certifies this contract has been awarded in compliance with all of the applicable provisions of Arizona Revised Statutes Title 41, Sections 41-1051 through 41-1056; and supporting documents are available for inspection or audit by the Division of Finance.
27. The CONTRACTOR and BOARD recognize that in actual economic practice overcharges from antitrust violations are in fact borne by the BOARD. Therefore, CONTRACTOR hereby assigns to BOARD any and all claims for such overcharges.

Dated this _____ day of _____, 19 ____

(State Board of Education)

(Contractor)

DELIVERY OPTIONS

Three (3) options are available to receive U.S.D.A. donated foods. You must select only one (1). ONCE THIS CHOICE IS MADE, YOU ARE COMMITTED TO THIS SELECTION THROUGH THE FISCAL YEAR.

Check your choice and fill in the appropriate information:

☐ OPTION 1 - Delivery to Food Prep Sites at \$1.374 per case. (See other side)

Name of Site	Address	Telephone	Contact Person
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Sponsor's Name	Billing Address	Telephone	Contact Person
----------------	-----------------	-----------	----------------

☐ OPTION 2 - Delivery to Central Warehouse at \$1.437 per case.

Warehouse Location	Telephone	Contact Person

Sponsor's Name	Billing Address	Telephone	Contact Person
----------------	-----------------	-----------	----------------

☐ OPTION 3 - *Pickup at Distributor's at \$.8835 per case.

Sponsor's Name	Billing Address	Telephone	Contact Person
----------------	-----------------	-----------	----------------

*Must be picked up on refrigerated trucks or acceptable alternatives.

Print Name: _____ Contact Telephone: _____

Authorized Signature: _____ Date: _____

(Over)

Supplement L

A food prep site is defined as a facility where food is prepared for one or several eating sites. A warehouse is defined as a facility constructed at platform height or which receives, on the average, more than 100 cases per week whether at a food prep site or not.

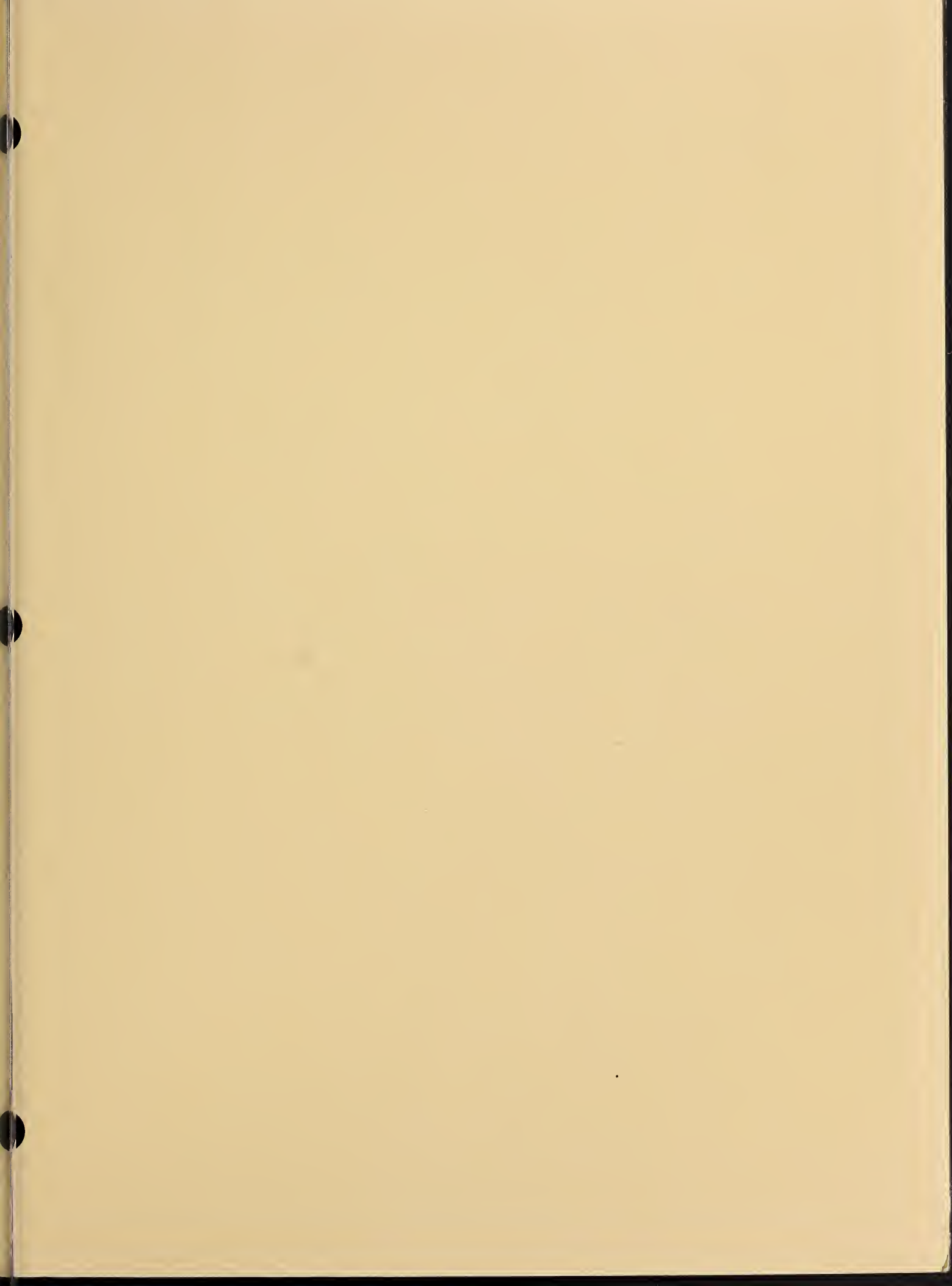
NOTE:

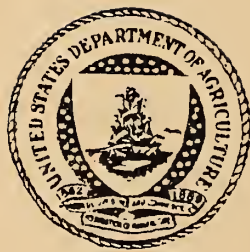
Copies of the completed survey forms will be sent to the contractor(s) for his use in compiling delivery lists and routes.

ADD = Added Since Previous Calendar

OFFERED = Product Will Be Available
(Arrival Period will be
entered when known.)

1. Mail monthly to school districts and contractors





Better Meals for Fewer Dollars

1985



